

621.5  
**INSIDE  
DOPE**

Learn to live and laugh—  
Thus delay your epitaph

By **GEORGE  
F. TAUBENECK**

Stories of the Week  
Definitions of the Week  
Gags of the Week  
Verses of the Week  
Do You Dig This?  
Ideas for Tomorrow  
Last-Minute Kicks  
Engineers: Attention!

**Stories of the Week**

Ken was in an out-giving mood when he spied three kids attired in handed-down pants and dirty T-shirts.

Happily he escorted the ragged trio into a haberdashery, and ordered all three fitted into new suits, shirts, and overcoats.

The two older ragamuffins were ecstatic; but the littlest wept heart-rendingly.

"Whassamatta with What's-His-Name?" wondered their benefactor.

"Please, sir, my name is Mary," she elucidated through her tears.

Junior was cautioned by his mother to tell the streetcar man he was only eleven.

"My, you're a big boy," remarked the conductor genially. "How soon are you going to be twelve?"

"Just as soon as I get off," Junior spilled the beans.

Daughter Teena tended the store (a bakery shop) while widower Daddy cruised out for a short beer.

Enter the policeman on the beat.

"Teena, don't you ever eat any of those scrumptious cupcakes?" he teased.

"No sir, that would be stealing. All I do is lick off the frosting."

"How are you doing with those tennis lessons?" wondered budget-minded daddy.

"Not bad, Pater; but the instructor tells me my form and speed need improving."

Appraised daddy:

"You'll need more speed if your form improves, my girl."

Sales were slow in the hole-in-the-wall men's shop. Proprietor stood in the doorway and grabbed a passerby by the lapels.

"You're wasting your breath on me," protested the pedestrian. "I have 26 new suits in my closet."

"OK, then, I have another proposition. Bring in the suits, and I'll make you a partner in the business."

"You're not fit to live with," stormed Mrs. Naggy. "Five times I've caught you double-dipping at the punchbowl. What will people think?"

"Don't worry, dear. I just tell them I'm procuring another cocktail for you."

And here's a final joke we love dearly:

Said one lady hog to another: "Heard from the Old Boar lately?"

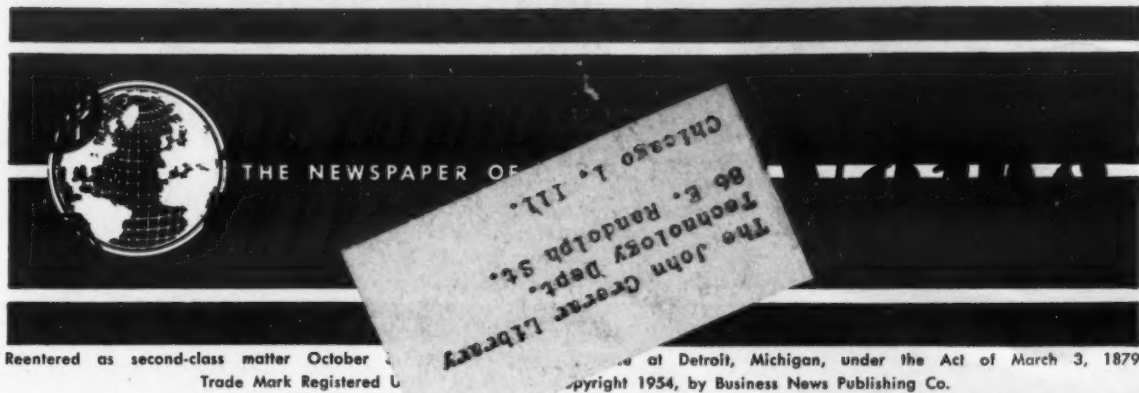
"No. But I had a litter from him last week."

**Definitions of the Week**

**HAPPY:** How a pessimist looks when he brings back bad news to the home office.

**EARLY SETTLER:** Man who pays his bills promptly.

(Concluded on Page 5, Col. 1)



**All-Industry Show Title  
Changed by ARI Board**

WASHINGTON, D. C. — The official name of the trade show formerly known as the All-Industry Refrigeration and Air Conditioning Exposition has been changed, it was announced by George E. Mills, show director of the Air-Conditioning and Refrigeration Institute, following the summer meeting of the board of directors of ARI at the Seaview Country Club, Absecon, N. J.

The next trade show sponsored by ARI will be known as the 9th Exposition of the Air-Conditioning and Refrigeration INDUSTRY, and is scheduled for Atlantic City on Nov. 28 through Dec. 1, 1955.

**Blast Freeze Readies  
Big Sales Program  
On 'Iceberg' Units**

CHICAGO—Blast Freeze Corp. here, which has taken over the manufacturing of the Iceberg drawer-type "warm room" freezer locker system, will enter into a far-reaching promotional campaign for the sale of the Iceberg units starting this Fall.

Blast Freeze Corp. was formed for the sole purpose of manufacturing and distributing the Iceberg systems by Robert B. Ayres, a sales executive in the appliance field for many years, most recently with Philco Corp.

The firm is now setting out to fill in its distribution picture, Ayres said, and dealers will have the product exclusively in the particular area that they serve. It is hoped to get much of the distribution pattern completed by late Fall, when the general advertising and promotion program will begin.

Ayres is also staffing his own sales and merchandising departments. The responsibility for obtaining the proper outlets, he says, will fall on the sales department, while the merchandising department will be charged with assistance. (Concluded on Page 4, Col. 2)

**Kelvinator Washer Has  
2nd Cycle for Synthetics**

NEW YORK CITY—Kelvinator recently introduced a new two-cycle automatic washer, with a second complete and separate cycle scientifically designed to properly handle synthetic fabrics.

H. L. Travis, manager of retail distribution and laundry products, announced both the new automatic washer and a matching automatic electric dryer. Suggested retail price on the washer is \$319.95 and on the dryer \$239.95.

Travis said the new model AW-2 washer incorporates separate, totally automatic washing cycles, one for regular loads, and the second for fine fabrics, or small loads.

"Research has shown that the increasingly popular man-made fibers like dacron and nylon require more than just a shorter washing time for proper laundering," Travis said. "They require less water, and gentler handling, especially when they are wet and most susceptible to damage."

(Concluded on Page 21, Col. 1)

**Industry Groups in  
Cleveland To Build  
'Iron Lung' Cooler**

CLEVELAND — Medical researchers here have discovered that a rapid reduction of body temperature has considerable therapeutic value in the treatment of certain types of polio, and industry groups have banded together here to work out an "iron lung" air conditioning system which will be suitable for such treatment.

The Cleveland section of the American Society of Refrigerating Engineers and the Cleveland chapter of Refrigeration Service Engineers Society are cooperating on the venture. The ASRE members will develop the system, and the RSES men will help to install and maintain it. Development of the closed circuit cooling system is now under way.

Medical researchers headed by Dr. Robert Eiben say that if the project turns out as successfully as they think it might, they will recommend to the National Foundation for Infantile Paralysis that similar equipment be installed in medical centers throughout the country.

Al Neva, A-P Controls Corp. representative, heads up the ASRE. (Concluded on Page 4, Col. 3)

**NAED Commends Philco  
For Distribution Policy  
Aimed at Transshipping**

PHILADELPHIA—A resolution commending Philco Corp. for its new distribution policy aimed at eliminating transshipping of merchandise was adopted recently by the executive committee of the National Association of Electrical Distributors.

In the resolution, the committee emphasized that the Philco action was a progressive one promoting the welfare of not only distributors and dealers but the entire industry.

At the same time, Philco Corp. released excerpts from a talk by John M. Otter, executive vice president of the company, made when he announced the new policy to Philco distributors.

The NAED resolution, as announced by L. E. Barrett, president of the association, reads as follows:

"WHEREAS one of the primary ills which besets the Television-Radio-Appliance Industry today is the surreptitious transshipping of merchandise through channels of (Concluded on Back Page, Col. 1)

**Many Owners of One  
Room Cooler Want  
More Units**

DAYTON — A large percentage of homeowners who have installed one room air conditioner in their homes have installed one or more additional units for further comfort cooling, it is shown in a recent survey conducted by the Frigidaire Div. of General Motors.

W. F. Switzer, the company's air conditioning sales manager, said that the survey revealed that 38 out of every hundred Frigidaire users interviewed had more than one unit in their home. Almost 30% of these users live in homes valued at \$15,000 or less. "Of this number," Switzer declared, "35 said they intended to buy one or two additional units."

The survey also disclosed that 62 out of every hundred Frigidaire users interviewed have just one unit. However, 40% of this number indicated they were planning to purchase additional units in the future.

(Concluded on Page 4, Col. 4)

**Studebaker-Packard  
Merger Might Bring  
Out New Products**

DETROIT—The air conditioning and refrigeration and appliance fields are watching with interest future announcements by the new Studebaker-Packard Corp., which has just been formed through the merger of the Studebaker and Packard corporations, approved by the stockholders of both firms.

At the time that the merger was first being discussed, the possibility was hinted at that the new corporation might diversify its manufacturing activities. One source (Concluded on Page 4, Col. 4)

**Norge Distributors See  
10-Model Range Line**

CHICAGO—A new line of gas and electric ranges built to the specifications of several thousand housewives who participated in a nationwide range preference survey was introduced to Norge distributors here recently.

Judson S. Sayre, president of the Norge Div. of Borg-Warner Corp., who addressed the distributors at the Edgewater Beach hotel here, declared that Norge intends to build its franchise "into the most respected and profitable in the appliance field."

(Concluded on Page 21, Col. 3)

**Reaction Varies  
On FHA Ruling  
On 'Open-Ends'**

**Gov't. Agency Rules That  
Permanency of Improvement  
Is Necessary for Insurance**

WASHINGTON, D. C. — The Federal Housing Administration's action in limiting its insurance of "open-end" mortgage loans to projects and equipment that will become a permanent part of the realty brought a mixed reaction from the trade.

Approval or disapproval appeared to be based on how the individual believed the restriction would affect his own business.

Some appliance manufacturers, who had hoped that the FHA would include major appliances in the acceptable category, were disappointed. They reportedly had hoped that insured open-end mortgage loans would provide an additional stimulus to appliance sales made as part of a home improvement program.

Al Bernsohn, managing director of the National Appliance and Radio-TV Dealers Association, was also reported as disappointed. He said appliance dealers had hoped the inclusion of appliances under FHA insured loans would give them a new sales tool.

A New York distributor group was quoted as saying that inclusion of appliances would have directly assisted those dealers who work closely with builders. A spokesman argued that many appliances have a longer life than many of the items that qualify for FHA insurance, such as wallpaper, linoleum, and tile.

On the other hand, the National Retail Furniture Association, which had fought the inclusion of any movable home equipment, approved the FHA ruling. Furniture dealers, according to Roscoe R. Rau, executive vice president of the group, believed that furniture had no place in a government insurance program. They also felt that the furniture retailer would be by-passed under any such program.

Financial institutions that dealt in short-term loans also approved the move as sound economics. On the other hand, savings and loans banks and mortgage lending (Concluded on Back Page, Col. 5)

**Predict Stockholder Vote  
On Super-Cold Liquidation**

LOS ANGELES — Stockholders of Super-Cold Corp. will vote Sept. 27 on the liquidation of the corporation, the Wall St. Journal has reported.

The paper said that the board of directors of the commercial refrigeration manufacturing firm had already approved the move. It quoted F. R. Waingrow, executive vice president, as saying that liquidation is certain.

Waingrow would give no reason for the move and said that the firm was not in financial distress.

**Mfrs. Ship over Million  
Room Coolers in 6 Mos.**

WASHINGTON, D. C. — An increase of 35.9% in the shipments of room air conditioners by manufacturers during the first six months of 1954 over the first six months of 1953 has recently been announced by Geo. S. Jones, Jr., managing director of Air-Conditioning and Refrigeration Institute.

Over a million units (about 1,063,000) were shipped by manufacturers during the first six months of 1954, compared with 782,066 units shipped during the same period of 1953.

**IN THIS ISSUE**

Refrozen Meats Do Not Lose Palatability, Study Indicates	2
Fan Motors for Room Conditioners	6
Water Chillers Save Day When Well for Air Conditioner Proves Unreliable	8
Immediate Cooling of Pork After Slaughtering Improves Quality of Cured Meat	9
10-Point Campaign Designed To Drive Discounters Out of Town in 90 Days	10
Comfort Cooling Clinic for Consumers Proves Popular	10
5 Steps in Selecting Motor Protectors for Hermetic Units	13
Distributor Works Closely with Dealers To Sell 50 Home Units in Town of 4,000	14
Houston Air Conditioner Sales Statistics	16
Literature Available	17
What's New	18
Refrigeration Problems—School Refrigeration Systems—On or Off?	20
Patents	22
Government Contracts	23



**For \$1****Servel Will Put Freezer  
In Home for 30 Days,  
Give \$25 Food Discount**

EVANSVILLE, Ind.—A payment of one dollar entitles customers to a food freezer for a 30-day home trial, plus \$25 worth of frozen foods free in the new "Proof-in-Use" national sales campaign launched by Servel, Inc.

Neal E. Schuman, appliance division field sales manager, said that the offer will continue through Oct. 30 and will apply to any of Servel's upright or chest-type home freezers.

Here is how the "Proof-in-Use" plan operates, according to Schuman:

The customer pays one dollar to the Servel appliance dealer and signs a simple agreement. The freezer is then installed in the home for 30 days and the customer receives a food plan coupon book good for a \$25 discount on \$100 worth of frozen foods purchased in any store.

The grocer selected by the customer receives a check for \$25 from the Servel dealer. He also is asked to validate the coupon book and return it to the customer.

Servel dealers are protected against any losses incurred in the free food offer, said Schuman, "because we feel sure that nine out

of 10 freezers will remain in the homes in which they are placed during this campaign."

He added that a large variety of selling aids are available to dealers participating in the freezer offer. They include newspaper advertisements, window banners, freezing guides, giant post cards and broadsides for direct mail, model sheets, envelope stuffers, folders, informative books, and the food plan coupon book.

**Grand Jury Hands Down 6  
Indictments In N.Y. State  
Freezer-Food Plan Case**

WARSAW, N. Y.—The Wyoming County grand jury investigating an alleged western New York home freezer racket handed down six indictments charging 12 violations in meat sales by the B & S Wholesale Food Co., Inc., Buffalo.

"There have been hundreds of improper meat sales in western New York, as well as in this county, in the past few months," said District Attorney Julian R. Hanley.

"This is the first time that any of the corporations directly involved in sales to home freezer customers in this area have been indicted. These 12 charges of unlawful sales were only a few that under present laws we are able

to present to the grand jury."

The indictments charge the B & S Wholesale Food Co. violated the law by not selling meat by net weight and not labeling the net weight on the package. Under the Agriculture & Markets Law, each of the 12 alleged misdemeanors carries a possible maximum fine of \$200.

The same jury also indicted on a forgery charge J. R. Zallan, 28, reported to be a salesman for B & S Wholesale Food Co. and Payless Plan, Inc. of Buffalo.

Zallan, a Buffalo resident, is now out on \$500 bail on a previous forgery indictment arising out of another freezer sale.

The present indictment charges him with forging the name "Phillip Loverdi," of Perry, N. Y., to a guarantee-of-obligations contract that accompanied sale of a home freezer by Payless Food Plan to Mr. and Mrs. Howard Walker, also of Perry.

It is charged that this guarantee covered the payment by the Walkers of \$689.04 in the Marine Trust Co. of Western New York.

**Nice Location**

GREER, S. C.—Twenty air conditioned units are planned for the new motel to be constructed on the Super Highway near here by W. E. Caldwell. The ultra-modern motel will be built at a cost of more than \$100,000 and will be located directly across from the King Cotton Drive-In Theater.

**HOME & FARM  
FREEZERS****Refrozen Meats Remain as Palatable as  
Ever, Pennsylvania Research Indicates**

STATE COLLEGE, Pa.—Refrozen meat is as good as ever, a recent release from the Pennsylvania Agricultural Experiment Station here asserts.

You can rewrap it, refreeze it, and use it another time, advises Dr. P. T. Zeigler, professor of animal husbandry on the station staff, in a statement that is bound to reopen a long standing controversy. His report is titled "Refrozen Meat Retains Palatability but May Be Drier."

Prof. Zeigler refers to earlier station tests which indicated that it is not a serious accident if an entire refrigeration unit breaks down or if there is an electric power failure for such a period of time as would cause all meat in a zero compartment or chest to thaw.

He also says this finding was substantiated by a U. S. Dept. of Agriculture bacteriologist, William Sulzbacher, whom he quotes as saying "There is no indication that frozen meat becomes more perishable after thawing than fresh meat."

**CAUTION IN HANDLING  
STILL VITAL**

"Refreezing meat," Prof. Zeigler continues, "does not materially affect its quality. This does not mean that one should handle frozen meat carelessly. As everyone knows, if meat is taken from frozen storage into a warm room, it will thaw and eventually it will become unfit for human food. But one need not become panicky about using all the meat in a package that has been thawed. Rewrap it, refreeze it, and use it another time."

To back up his conclusion the State College scientist relates some tests conducted under his direction to determine the true status of the question of refreezing and reusing meat that has once been thawed out.

The meats used in these tests were beef, veal, and lamb. Use was made of freezing temperatures between 0 and -25° F. followed by holding temperatures during and after thawing of 35 to 38° and 65 to 70° F. Wrapping materials used were laminated butcher paper

(Tyton Tite) and aluminum foil (.0015 gauge). Quality tests were made for sight, taste, and smell.

**MEAT HELD AT ROOM  
TEMPERATURES**

Cuts of thawed meats, Prof. Zeigler reports, "were held in unopened packages at room temperatures (65 to 75° F.) for unbelievable lengths of time with no apparent deterioration."

Some samples of beef, held for a week under these conditions, were again refrozen at zero and maintained at this temperature for two weeks, then stored in a household refrigerator at 38° F. for a week. Upon cooking, no adverse effects on aroma or flavor of the meat could be observed."

Meat that was alternately thawed and refrozen in the unopened package as many as three times, before using, he declares, was equal in flavor and aroma to that used immediately after the first thawing. Samples that were thawed and held in the unwrapped state had longer storage life in a household refrigerator than fresh meat.

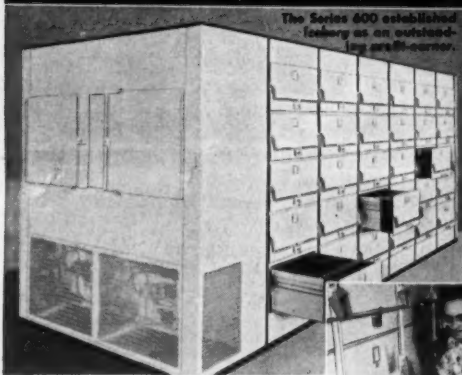
Meat cuts which had been thawed and unwrapped and then rewrapped and refrozen, he also states, were not materially changed in palatability but were drier because some of the juices were lost.

Reversing the position of thawed meat from which wrappings had not been removed, by turning the package upside down when replacing it in the zero compartment, permitted the meat to absorb considerable of the juices which escaped in thawing.

**Positions Open  
AIR CONDITIONING  
ENGINEERS**

Development Engineers on room air conditioners. Require men with degree in engineering and some practical experience. Opportunity to advance to department head. Send replies advising experience, education, and personal data to Personnel Division.

**SERVEL, INC.**  
EVANSVILLE, INDIANA

**Famous Money-Maker Returns!**

OVER \$12,000,000 WORTH NOW IN USE!  
Alan Wilson, of Wilson Markets, Deerfield, Illinois, demonstrates the large, roomy drawers which glide easily in and out with fingertip action due to time-tested double roller-bearing, top suspension construction. All contents are readily accessible. Drawer offers desired segregation with individual lock for safety of contents. Capacity, 6 cu. ft. per drawer.

**ICEBERG**

THE ONLY DRAWER TYPE FREEZER

**BACK AGAIN BY  
POPULAR DEMAND!**

New, vastly improved Iceberg with self-contained refrigerating section on top for complete flexibility of units. Only 4' x 7' high.

**Yes! the good old  
'NO-COMPETITION'****days are back again!****Here's How the Revolutionary Iceberg  
Freezer POURS Money Into Your Pockets!**

You will be given an exclusive franchise in your market area if you meet the simple, commonsense requirements set up by the BLAST FREEZE CORPORATION. In the Iceberg itself, you are given a time tested, fully accepted product (over \$12,000,000 worth already in use!) in which you and your trade can place complete confidence. There is no other freezer-equipment like Iceberg—its exclusive, sales-compelling, super-service design is fully protected by basic patents—so you have no direct competition from any source. Your prospective buyers are almost innumerable—hotels, hospitals, stores, food service establishments of all kinds, apartment buildings and so on and on—which means all-year-round sales and profits in a virtually unlimited market. Your Iceberg line is complete, from 36 to 480 net cubic feet (6 to 80 drawers) per unit, and completely flexible, to meet your every capacity need, in any installation. Advertising and merchandising programs will pre-sell for you at a

price that makes you a fair profit. All planning is for volume, sales, profits, pricing and distribution.

**Here's Why Your Customers Are HAPPY to Buy!**

Iceberg has so many exclusive features that, no matter what type of prospect you approach, you are certain to have several that are "tailor-made" to meet his individual needs! To list them and their specific advantages in each of their many possible types of installation is impractical here. With the highest efficiency and capacity of any unit for fast freezing of food, and the greatest net usable storage capacity for every square foot of floor space required, Iceberg gives you virtually unlimited sales opportunities with a direct, individualized, sales-clinching story for every call. For full details, write us TODAY, giving us complete information about your own business. We will rush the Iceberg facts at once!

Patent Notice. Iceberg Units are covered by U.S.A. and Foreign Patents.

**PHONE, WIRE, WRITE QUICK!**

**BLAST FREEZE CORPORATION**  
1 N. La Salle St., Chicago 2, Illinois

I attach my business letterhead and all pertinent information about my own firm. Please RUSH details concerning your Iceberg exclusive franchise.

Firm Name \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

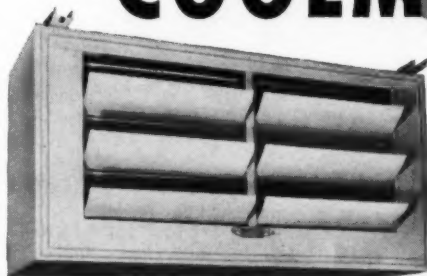
My name is \_\_\_\_\_

**BLAST FREEZE**

corporation

1 N. La Salle Street • Chicago 2, Illinois

TELEPHONE: DEarborn 2-0055

**KRAMER****COOLMASTER**The Superior  
Product  
Cooler5 SIZES  
10,000 to 60,000  
BTU's**For EXTRA LARGE CAPACITIES**

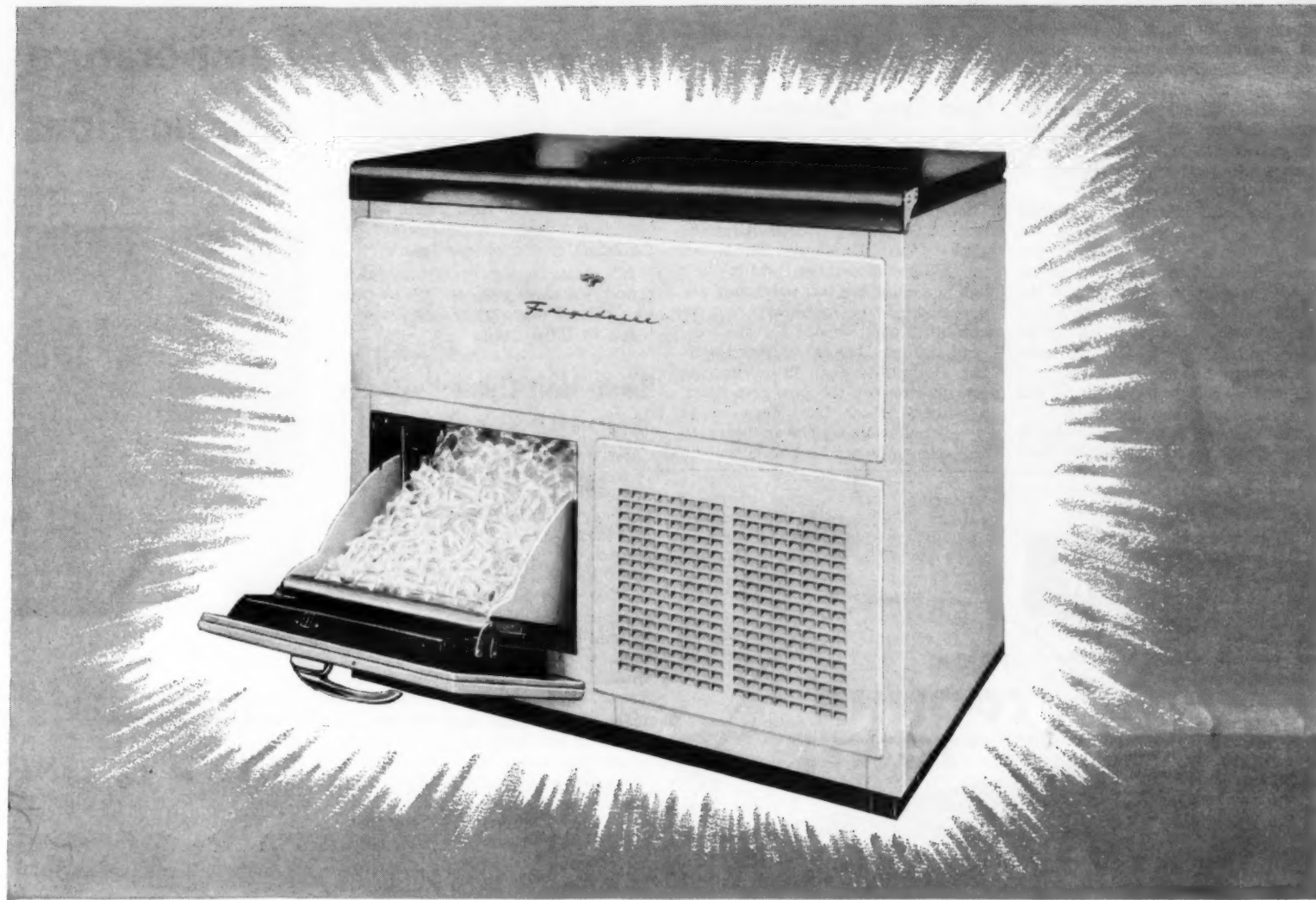
Ceiling mounted, you save valuable floor  
and storage space. Easier to install and  
service, too. Built-in Heat Exchanger.

WRITE FOR CATALOG K-230

**KRAMER TRENTON CO. • Trenton 5, N.J.**



# Good News for Frigidaire Dealers in the New, Improved Ice Cube and "Cubelet" Makers



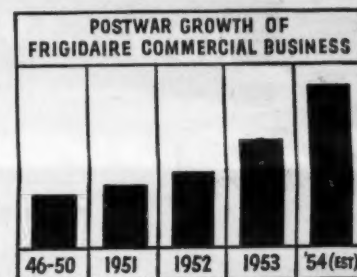
Now the door and bin open together, making it easier to remove ice from the bin. The modern restyled, all-steel cabinet is a lustrous neutral beige. Work top is long-lasting porcelain. Ice maker parts are easily removed for cleaning. Space-saving dimensions: 38 $\frac{3}{8}$ " high, 44 $\frac{1}{4}$ " long, 31 $\frac{3}{8}$ " deep. By inserting the

"Cubelet"-sized grid, a brand new kind of ice may be produced which out-modes crushed, cracked and flaked ice. "Cubelets" measure  $\frac{5}{8}$ " square, and they may be made as thick or thin as desired. Frigidaire ice is pure; meets sanitary standards approved by hospitals.

## Ice Cube Maker Improvements Typical of Frigidaire's Continuing Development and Expansion in Packaged Products

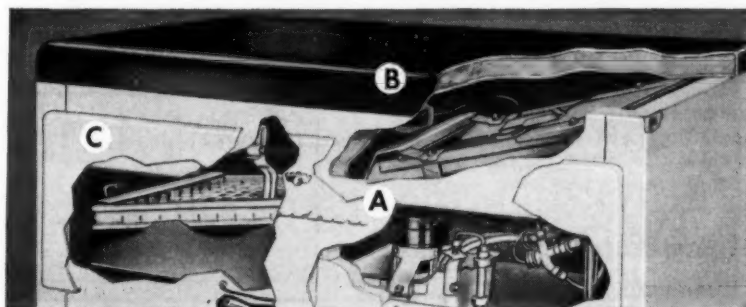
Frigidaire's packaged product lines have been deepened and strengthened these past ten years to keep pace with new engineering-merchandising methods. And this commercial business has grown with one record year eclipsing another. Frigidaire is now developing its commercial business as never before to blanket the most sales opportunities.

Aiming for greatest dealer sales, Frigidaire is concentrating on packaged products and compressors. Only packaged products give dealers the types of sales tools proved so effective for home appliances. Frigidaire Commercial Dealers can promote products made by one manufacturer—merchandise exclusive features—sell quick installations at accurate prices—and back up the sale with factory-trained service men.



Frigidaire commercial sales have doubled and redoubled in less than ten years. The chart shows this growth—why Frigidaire is going all out to build dealers' commercial business. And soon new products and ideas may open added fields for even bigger sales opportunities.

## Exclusive Trouble-Free Operating Principle Offers Tremendous Sales Advantage



Comparing a Frigidaire Ice Maker with other machines can almost insure a sale . . . solely on the basis of operating advantages. There are no noisy grinders, choppers, knives or other complicated mechanisms to give trouble. A customer just opens the bin and scoops out the ice. And the cost is low. For as little as 26 cents a day, the ice maker produces up to 200 lbs. of ice in over 5,000 cubes or about 20,000 "Cubelets".

The diagram shows the simplicity of Frigidaire's ice making principle. First, water from the reservoir (a) flows evenly

over freezing plate (b) and is recirculated until the ice sheet is frozen to a preselected thickness. Next, the sheet slides down onto electrically heated grids (c) which partition sheet into cubes (or "Cubelets") that drop into an insulated bin. Operation stops when bin is full—starts when cube level is reduced. Ice making is completely automatic.

When a "Cubelet" Grid is used, the ice maker turns out tiny uniform gems of pure ice that won't pack or jam, have no sharp edges and cool quickly without excessive melting.

## Advertising aimed at big commercial ice user markets

Frigidaire Ice Maker advertising regularly reaches the people-who-buy in hotels and motels, resorts and restaurants, fountains and bars, hospitals, sanitariums, institutions and a host of other markets. Ads are hard-hitting full pages which highlight the 26¢ per-day economy and the ice maker's simplified operation. Other ads headline the choice of cubes or "Cubelets". Every ad works to pre-condition ice maker prospects for the Frigidaire Salesman's story. Look for Frigidaire Ice Maker ads in such leading publications as: *Saturday Evening Post*; *Modern Hospital*; *Hotel Management*; *American Restaurant*; *Drug Topics* and *Institutions*, many, many others.

## Frigidaire Meter-Miser exclusive selling feature

The heart of the ice maker is the Meter-Miser Compressor—the simplest, most dependable cold maker made today. It's completely sealed inside a welded steel case. Only three moving parts. Never needs oiling. Protected for life against moisture—warranted for 5 years.

## ADAPTS TO CUBES OR "CUBELETS" IN MINUTES



Now the same Frigidaire Ice Maker can be converted to make crystal-clear ice cubes or "Cubelets" simply by inserting cube or "Cubelet"-sized grids. This means that Frigidaire Dealers can offer customers either cubes or "Cubelets" without keeping inventory on two types of ice maker models. Another plus in Frigidaire's sales-engineered lines of packaged products.



# FRIGIDAIRE

COMMERCIAL REFRIGERATION AND AIR CONDITIONING

—for growth and progress with General Motors



FOR  
REFRIGERATION  
AND  
AIR CONDITIONING  
EQUIPMENT...

**SPECIFY**

**READING  
QUALITY  
COPPER  
TUBING**



**READING  
TUBE CORPORATION**

EMPIRE STATE BUILDING  
NEW YORK 1, N. Y.  
WORKS: READING, PA.

## Blast Freeze Locker Sales Program--

(Concluded from Page 1, Col. 2)

ing the outlets in maximizing their local volume.

This program will be backed up by a substantial advertising program which will have as its theme complete merchandising programs directed at specific markets.

Each program, when directed at specific markets such as hospitals, meat markets, apartment buildings, institutions, industrial feeding setups, will be merchandised by tying together advertising, direct mail, publicity, and training of the distributors' salesmen right down to the local level, Ayres said.

Although it is planned to start production by Sept. 1, units will not be available to the commercial market until November. The first model of the Iceberg line will be the series 75 which incorporates three drawer-high sections and completely self-contained refrigeration units that mount on top of the assembled drawer sections.

At periodic intervals additional models such as Series 600 and 300 will be made available. The 600 series, units of which are in use in many parts of the country, is the model with drawers on both sides, five drawers high, and up to 80 drawers total. Series 300 consists of drawers on one side only, or one side of the Series 600, and can be mounted against the wall.

The Iceberg system was developed in the early 1940's by Wil-

liam McKinley Baird, inventor. By 1949 it was said that more than \$12 million worth of Iceberg freezers were in use in all types of applications. This early development of the Iceberg unit was accomplished by Iceberg Refrigerated Locker Systems, Inc. of New York City.

In the early part of 1949 all rights to the Iceberg name and units were acquired by Iceberg Lockers of Chicago. Because of the death of a principal in that firm, there had not been much activity on the Iceberg systems in recent years. Ayres began an investigation into the possibilities of the product in 1952, and in 1953 started the formation of Blast Freeze Corp.

## 'Iron Lung' Cooler--

(Concluded from Page 1, Col. 3)

group working on the project. Working with him are Robert T. Thompson of Bryant Heater, and Robert De Fasselle, consulting engineer. Carl Zembauer heads up the RSES committee, which also has the function of obtaining co-operation from manufacturers in obtaining components for the system. James Downs of Refrigeration Supplies, Inc. is acting as coordinator for the two groups on a project which they describe as "a contribution by the industry to our country's war on disease."

## Worden Is Kelvinator Product Planning Mgr.

DETROIT—Appointment of F. J. Worden to the new post of manager of product planning was announced recently by D. A. Packard, Kelvinator general sales manager.



F. J. Worden

Packard said Worden's appointment signifies major progress in the continuing planned expansion of the Kelvinator product development operation under the direction of Charles J. Coward, merchandising manager.

Worden joined Kelvinator in 1936, serving as commercial advertising and sales promotion manager, and later as range advertising and promotion manager. From 1942 to 1945 he held administrative posts with manufacturers of material for the armed forces.

He rejoined Kelvinator as sales promotion manager in 1945, and was named manager, home freezer sales, in 1953.

## Room Unit Owners--

(Concluded from Page 1, Col. 4)

Switzer explained that this trend is apparent, especially in existing homes where circumstances are not favorable to the installation of a large central system. This also allows the homeowner to "zone-cool" his house by operating only the unit in the room that is being occupied. He can save himself financial burden by buying one room unit a year until he has the amount of air conditioning he desires.

He went on to say, "in the 25 years that Frigidaire has been producing room air conditioners, there has never been a greater concentrated demand than we have experienced this year and last. About every household window in the country is a potential resting place for a room air conditioner."

## Munce Replaces Hertzler On ARI Board of Directors

WASHINGTON, D. C.—Marshall G. Munce, vice president of the York Corp., has been elected to fill the unexpired 3-year term of J. R. Hertzler on the board of directors of the Air-Conditioning and Refrigeration Institute, it has been announced by Geo. S. Jones, Jr., managing director of ARI.

Munce will represent the year-round residential air conditioning section of ARI on the board, and is also chairman of the by-laws committee.

## Studebaker-Packard--

(Concluded from Page 1, Col. 4)

close to Packard declared that the new firm might like either to take over some business in a line other than automotive, or set up its own.

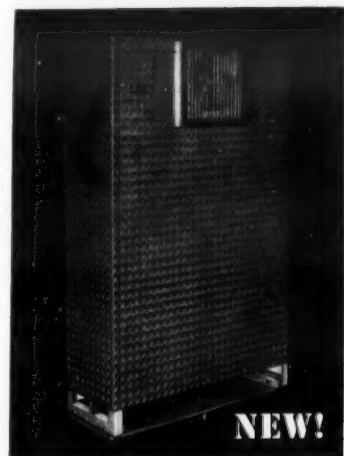
James J. Nance, president of Studebaker-Packard, has had considerable experience in the appliance field with Hotpoint and Easy Washer, and in the air conditioning field with Frigidaire.

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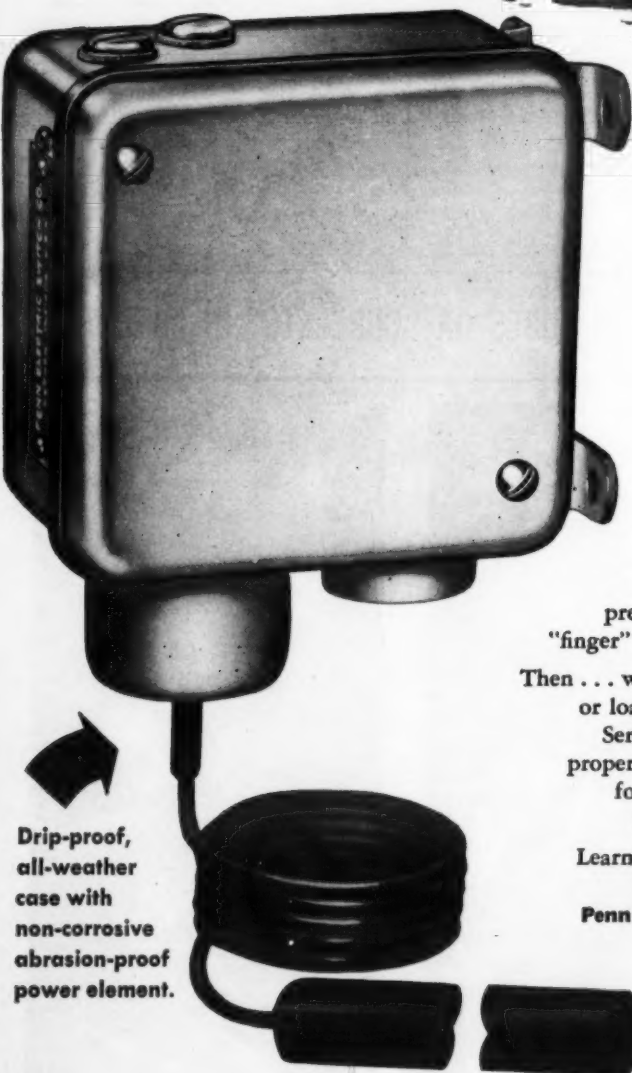
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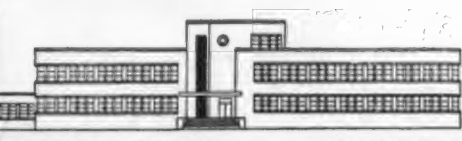
Then . . . when ambient temperature drops, humidity is low or load varies to lower cooling water temperature, the Series 277 controls a bypass valve or fan to maintain proper head pressure. Result? More efficient operation for commercial refrigeration and air conditioning compressors.

Learn more about this Series 277 Control. Get complete installation data from your wholesaler or write Penn Controls, Inc., Goshen, Indiana. Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A.  
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## INSIDE DOPE

Learn to live and laugh—  
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)

**FALSIES:** Difference between facts and figures.

### Gags of the Week

"Statistics can be used to support anything—especially statisticians."—*Peninsular Light*.

By watching television more and reading less, in the words of Yale university's A. Whitney Griswold: "We have traded in the mind's eye for the eye's mind."

Temptation bothers you most when it doesn't tempt any more.

All a woman needs to be successful are two good lines—one a man talks and she listens to, and another he can look at excitedly.

It hurts more to have a belief demolished than to have a tooth pulled. And no intellectual novocaine is available.—*ELMER DAVIS*.

The supply of uranium in our minor planet is limited, and it is feared that it may be used up before the human race exterminates itself.—*BERTRAND RUSSELL*.

### Verses of the Week

When you get to Heaven  
You will likely view  
Many folks whose presence there  
Will be a shock to you.  
But, keep very quiet,  
Do not even stare.  
Doubtless there'll be many folks  
Surprised to see you there.

The pundits gave vent to this chorus:

"The Republic may totter and fall.

"Our allies soon will depart us, and Joe is the cause of it all.

"So haste to the Pentagon, brothers, and send a detachment to Ike;

"Summon a Cabinet session, get Nixon in front of the mike!

"Let everyone stir up this ruckus, let all of us get into the act.

"Let's blow up the battle with rumor, and never obscure it with fact.

"It's time to kill off McCarthy. It's time to turn out his light.

"It's time to say to the White House: Now, Ike, let's you and him fight;"

"On with this terrible combat; let them wrangle it out for a bone.

"The Army can have handsome David, the wolves can have Mr. Cohn.

"But spare us sweet Joseph McCarthy—and shudder if you would know why:

"Without a Joe to belabor, the press would curl up and die."

I like to dance with Cleo Clotts,  
She doesn't wear those you-know-whats.

### Do You Dig This?

Hippocrates exploded early Greek theories of supernatural cause for epilepsy and other afflictions.

His brilliant contributions lay dormant for about 2,000 years. Avicenna revived his theories around 1000 A.D.

Another 500 years passed before they were exposed to the scrutiny of the incredible Theophrastus Bombastus von Hohenheim, a medico of the Renaissance.

Progress in the next 300 years culminated in the masterful work of Hughlings Jackson.

Berger, 1929, demonstrated that

electrical activity of the brain could be recorded through the unopened skull by electroencephalography. Abnormalities in the electroencephalograms were related to conditions of the cerebral tissue and to the various forms of epilepsy.

The beneficial effect of chemicals has been known for centuries, but it was demonstrated in 1912 for the first time by Hauptmann with phenobarbital.

In one research program more than 700 chemicals were evaluated for anticonvulsant activity. This indicated that certain hydantion chemicals were effective but some of them exhibited severe toxic side effects. A more recent series based on chemicals containing a benzylamide radical disclosed a new anticonvulsant with the commercial designation, Hibicon benzchlorporamide.

Thus chemical research provides another valuable addition to the pharmacologic armamentarium for the relief of suffering.

(The above has been condensed from an American Cyanamid Co. release. We hold that it establishes an American Record for quadruple-exhaust words.)

### Ideas for Tomorrow

Man has existed for about a million years. He has possessed writing for about six thousand years, agriculture somewhat longer. Science, as a dominant factor in determining the beliefs of educated men, has existed for about three hundred years; as a source of economic techniques, for about one hundred and fifty years. When we consider how recently it has risen to power, we find ourselves forced to believe that we are at the very beginning of its work in transforming human life.—*BERTRAND RUSSELL*.

We cannot rise by demanding a higher place, or by assuming qualities we do not possess. If we

rise to the top, it must be by honest and patient earning.—*Morton Messenger*.

A just and reasonable modesty does not only recommend eloquence, but sets off every great talent which a man can be possessed of; it heightens all the virtues which it accompanies; like the shades in paintings, it raises and rounds every figure and makes the colors more beautiful, though not so glaring as they should be without.—*JOSEPH ADDISON*.

Lawn grasses and hedges meticulously kept do not necessarily recommend a man. Look for the little worn path in them, leading to the neighbors.—*Better Homes & Gardens*.

### Last-Minute Kicks

"Name two kinds of libel," read a journalism exam question proffered at Memphis State college.

Dr. William Howard Taft (no kin) received an unexpected answer:

"Libel to, and libel not to, like a co-ed."

College boy named his jalopy Mayflower because so many Puritans came across in it.

The girl who climbed the ladder of success wrong by wrong is matched by the babe who complained all her boy friends were like dry cleaners—they worked fast and left no ring.

### Engineers: Attention!

The president of Westinghouse Electric Corp. urges the nation's engineers to play a greater role in public life, and to take the lead in "applying engineering principles to our social problems."

Gwilym A. Price avers: "The engineer is not only the ideal man for this work, but also stands in

an ideal position to perform it." Yet, he added, in the past the engineer has "tended to stay clear of such commitment."

Of the 48 governors, he pointed out, none is an engineer, while only two of the 96 United States senators are of the engineering profession.

Wherever the nation's problems are physical and subject to technical solutions, they have been and can be surmounted, Price adds:

"Unhappily, however, many of our most dangerous problems are not physical and will not be solved by better research, high productivity, or any of the other industrial virtues. I refer to the social illnesses that afflict our age. How to cope with these is probably the most perplexing internal problem we face.

"You and other engineers hold part of the answer in your hands," he told his audience. "You have successfully applied engineering principles to industry.

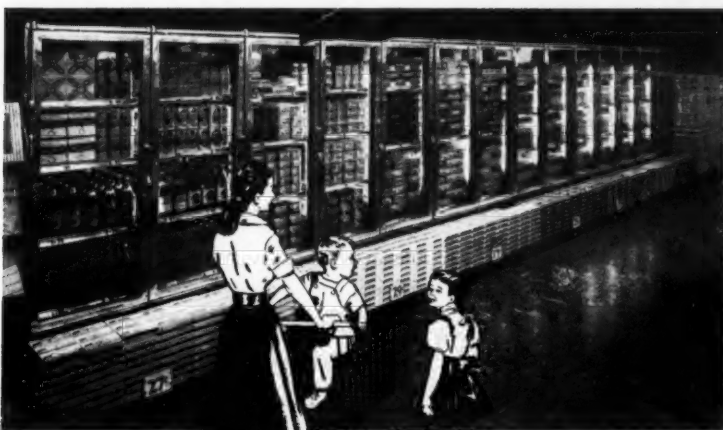
"Now our hope lies in part in the application of those principles to our social problems.

"With all possible deference, I suggest that the engineer himself—the man who knows most about the physical facts of our world—should attempt to make that application. . . . I do not present this to you as a duty or an obligation, but rather as a challenge and an opportunity."

While the U. S. industrial productive machine has been enormously expanded, economists point out that "we have merely caught up with the ground we lost in the depression," and that Soviet Russia is "amassing capital, training engineers, and building up plants at a faster rate than we.

"There is almost nothing that we cannot do, if we bend our national will to doing it. But the first requirement of such a national effort in engineering is—engineers. The deficit is now critical."

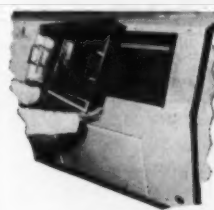
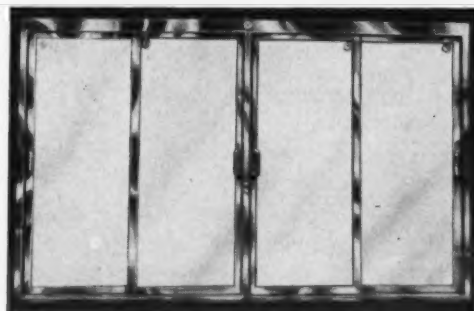
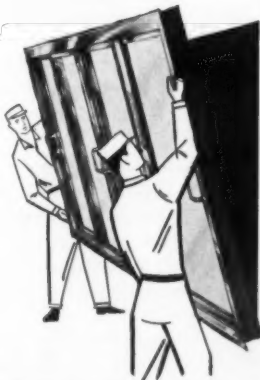
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PATENT PENDING



# Fan Motors for Room Conditioners

*Steady, But Slow Progress In Improving Performance,  
Design of Small Motors Predicted by I. E. Ross of G-E*

SEATTLE—No "miraculous new performances, but a steady continuation of the improvements accomplished so far" in fan motors for room air conditioners is predicted by I. E. Ross, manager of engineering for General Electric Co.'s Special Component Motor Dept.

Ross reviewed developments and problems in fan motor design at the Room Air Conditioner Conference held during the 41st semi-annual meeting of the American Society of Refrigerating Engineers here.

Possible improvements in efficiency (but no miracles) are seen by Ross for the shaded-pole fan motor along with standardization of mountings and leads, and more quiet operation, and possibly some betterment in lubrication.

## Much Progress Seen In Next Few Months

"Much progress is forecast for the next few months," he commented.

"This paper," he explained, "is the second event in a sort of home and home series between the room air conditioner people and the electric motor designers. Last fall, the electrical engineers gathered in Fort Wayne, Ind., and invited their customers in the air-moving business to come tell them about the problems of applying motors to fans and blowers.

"The motor users were eager to oblige and some rather interesting discussions ensued. You can well imagine that room air conditioners came in for their share of the spotlight and that motor manufacturers felt once more the full impact of this new industry with its fabulous growth and startling potential.

"And now today, a representative of the motor industry is here on your invitation to discuss with air conditioning and refrigeration people some of his motor design problems.

## Shaded Pole Motor Has Grown with Fan Industry

"This is a most natural association. The development of the fractional horsepower motor through the 30 years following 1889 was a direct result of the growth of the ventilating fan industry. In more recent years, the refrigeration and the electric motor industries have made remarkable joint advances as the needs of one were met through the ingenuity of the other.

"Today in the room air conditioning business the air-moving engineer, the refrigeration engineer, and the electric motor designer—all three—have pooled their talents to produce a new industry, one which is creating jobs for the worker, profits for the investor, and luxurious comfort for the buyer. This team, with a reputation for accomplishment already established, should be capable of making real progress in the years just ahead," Ross believes.

"Consistent with this spirit, I should rephrase my purpose for being here. As a representative of the motor manufacturing industry, I am here to discuss with you some of our motor design problems, especially those associated with the fan and blower motors of the room air conditioner.

## Workhorse of Air-Moving Applications

"The widely used workhorse of air-moving applications requiring less than  $\frac{1}{2}$  hp. is the shaded-pole motor. About 1894 the principle was discovered that a sort of rotating field and consequent starting torque could be produced in a single phase, salient-pole motor by

short circuiting part of the pole.

"The cost-savings of such a simple structure developed increasing popularity for the shaded-pole motor. By 1935 it had far out-shadowed all other types of single-phase induction motors in ratings  $\frac{1}{2}$  hp. and below. In the past 20 years, its power capabilities for air-over applications have been increased until now  $\frac{1}{2}$ -hp. motors are available even at 6-pole speeds.

## Low Cost, Simplicity, and Ruggedness Cited

"The shaded-pole motor earned its acceptance because the advantages of low cost, simple, rugged construction, freedom from switches, commutators, slip rings, capacitors or relays, and the ease of providing operation at several speeds.

"The disadvantages were overlooked or considered not important. Relatively low efficiency in low power motors was not critical as long as the heat could be dissipated. Inferior power-factor at these loads was not troublesome. Noise was not a problem, not on early fans and blowers. Comparatively weak starting torque was still strong enough to start an almost zero load and the torque characteristics of fans were somewhat self-compensating for motors which tended to be sensitive to voltage variation.

## Progress Demands Better Design, Performance

"As has happened in so many progressive industries, components once considered adequate become marginal. Disadvantages once of secondary importance now are unacceptable. Erstwhile advantages seem to lose their importance. The entire product is subjected to re-evaluation. Redesign and substitution become the order of the day," Ross said.

"This thing has happened in the room air conditioning business with respect to the shaded-pole motor. Increased loads, improved fans, and quieter operating ambients have made noise a major problem. Proposed rulings of the National Fire Protection Association and demands by power companies have brought efficiencies and power factors into the spotlight. At the same time, competition for this market has allowed no lessening of the emphasis on economy or long life.

"The ringing challenge to the three branches of engineering who jointly support this industry has suddenly become 'the maximum B.t.u./hr. per ampere per dollar per decibel.' The challenge will be met by engineering ingenuity applied through thermal coefficients, square inches, cubic feet per minute, and horsepower per ampere.

## Nothing Spectacular In Sight

"This state of affairs is not discouraging. On the other hand, it is the stuff from which comes real progress. We three have faced and overcome such obstacles before. It will happen again. I don't predict any sudden miraculous advance, but I am confident that step by step, a little here and a little there, we will repeat the history of the refrigeration industry in pushing back the horizons of performance.

"Let's talk now about some of the motor problems. First, efficiency. The facts of the matter are that the shaded-pole motor is not only traditionally, but basically, a relatively low-efficiency motor. I would be misleading you not to say so.

"One evidence of this feature is its characteristically low operating speed, 1,550 or 1,050 r.p.m. instead

of 1,750 or 1,150 as in other induction motors. Low speed or high slip and high rotor losses go hand in hand. Add to normal stator losses the specific losses caused by the shading coils and a strong third harmonic and you have a good picture of the problem.

## Performance Improvements Boost Costs

"I do not for a minute say that nothing can be done about today's performance. Gradually, through improved lamination geometry and optimum proportions we have been able to attain 37% or better on  $\frac{1}{2}$ -hp., six-pole motors which are designed to retain their advantage of low cost without losing control of minimum torque and low noise levels.

"By means of special iron, thinner laminations, extra long stacks, and smaller air gaps, efficiencies well into the 40's have been obtained. Such motors, however, no longer have the low cost per watt output of the more orthodox design. Such a motor can easily have an increased cost of 20% for magnetic material alone.

"I believe that progress in this

direction will continue slowly as materials and techniques improve, but I see no miracle on the horizon which will produce suddenly much more efficient shaded-pole motors.

"For 230-volt applications and ratings not plagued by ampere limits, the low cost and speed control capabilities of shaded-pole motors will insure their demand. For the troublesome applications, derivatives of the shaded-pole motor or the permanent split capacitor motor in several forms will be required.

"As such motors develop broad application, the motor industry is contributing to our mutual goal through the development of low-cost coil-placing and insulating techniques for semi-distributed winding motors. Much progress is forecast for the next few months.

## Power Factor

"Now for power factor. The rapid rise in the number of room air conditioner installations has made the power companies extremely conscious of this new load, especially in the hotter areas of the country. At least one such company, Union Electric of St. Louis, has issued a flat ultimatum that by Jan. 1, 1955, all room air conditioners must have a .90 power factor to qualify for installation.

"The Air-Conditioning & Refrigeration Institute, however, is taking a more realistic view, and has about completed action to include the following minimum power fac-

tors for room air conditioners in the standards:

.85 for  $\frac{3}{4}$  hp. and larger  
.80 for  $\frac{1}{2}$  to  $\frac{3}{4}$  hp.  
.75 for less than  $\frac{1}{2}$  hp.

"With respect to the measurements of these values, the A.R.I. has added:

"1. Tests are to be made at Underwriters' Laboratory conditions:

120, 208, or 240 volt;  
104° F. ambient on condenser side.  
104° F. ambient on evaporator side.

"2. Values are to be recorded at the air conditioner terminals.

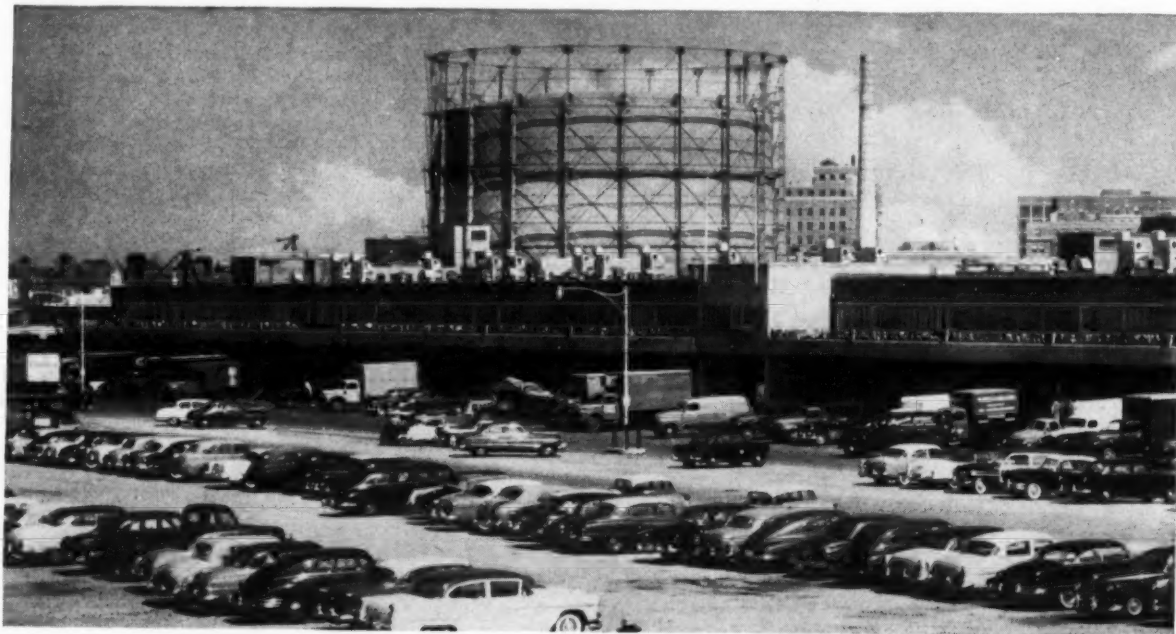
## A. R. I. Considers Seal of Approval

"If A.R.I. adopts a proposed institute seal of approval, air conditioner manufacturers will be allowed to display it only on equipment which meets the standard.

"The Edison Electric Institute is enthusiastic about the proposed A.R.I. seal as an aid to identification of complying devices," Ross said.

"A committee of the E.E.I. has reviewed the A.R.I. standards on power factor and is recommending that power companies use these values in their regulations, recognizing, however, that it is not practical to enforce compliance before Jan. 1, 1956. E.E.I. recommends further that the air conditioning industry continue developments looking toward continued improvement.

(Concluded on next page)



# Over a million cubic feet of with "FREON"\* safe

## New terminal expected to handle—and protect—70% of Boston's wholesale meat

Ninety-eight compressors, ranging in size from 3 to 25 h.p., and totaling 542 tons' refrigerating capacity, protect meat in 1,356,828 cubic feet of cooling and freezing space! That impressive statistic applies to the new Massachusetts Wholesale Food Terminal, housing as many as 26 separate meat-handling firms under one roof. The architectural firm of Thomas Worchester, Inc., designed and built the structures. Their refrigeration engineer, Sydney L. Crook, says: "As this development grows, we expect it to handle 70% of all wholesale meat that goes through Boston."

## 3 DIFFERENT DEGREES OF COLD MAINTAINED

Within the plants each storage unit is divided into three compartments. In a small freezer compartment temperatures stay at 0°, while a larger beef-holding chest maintains 34°F.



Trimming beef in a shipping room, where temperatures are kept at a workable 50°F.



## Fan Motors for Room Air Conditioners--

(Concluded from preceding page)

ment of minimum power factor for units marketed after Jan. 1, 1957. As a matter of fact, I am told that power factor requirements will look more like this by Jan. 1, 1957:

- .90 for  $\frac{3}{4}$  hp. and larger
- .85 for  $\frac{1}{2}$  to  $\frac{3}{4}$  hp.
- .80 for less than  $\frac{1}{2}$  hp.

### Pressure Taken Off Shaded Pole Motor

"The first proposal temporarily takes some of the pressure off the shaded-pole motor, for with the broader use of running capacitors on compressor motors, the stipulated power factors can be fairly readily met despite the .55 to .60 power factor which is characteristic of the shaded-pole motor. Where power factor correction on shaded-pole motors results in desired ampere levels at acceptable costs, this technique can be used. It does not appear to be an immediate necessity, however, in bringing units into compliance with the 1956 power factors.

"With respect to developing ultimate designs of acceptable shaded-pole motors with appreciably higher inherent power factor, I see little hope. Improvements in this area will somehow involve the use of capacitance effects. Ingenuity will express itself in the methods

developed to minimize the cost while obtaining the benefits.

"A universal comment on fan motors is the need for an 'oilless bearing,' some structure, with or without lubricant, which will permit the use of a five-year warranty, or what is more important, will demand no lubrication service for the life of the equipment. At this date, no bona fide non-lubricated material is in sight and so our discussion must center on 'permanent' lubrication.

"The soundest approach appears to be the use of a large chemically stable, non-foaming oil supply, retained in adequate wicking, in a mechanical system which insures an oiled bearing, and return arrangements effective at all speeds and in any position. With good heat removal from the bearing and the proper selection of materials to eliminate catalytic aid to oxidation, such a system, whether single or double bearing, should run indefinitely under most conditions. In fact, when all these factors are present, motors do run for years.

### Leakage and Evaporation Not Always Controlled

"The trouble now is that the elements of leakage and evaporation are not always under control and the best designs have some short-

comings with respect to speed or position.

"Another problem we all face is that of standardization in the shaded-pole motor line. The National Electrical Manufacturers Association is sponsoring an activity in this connection in which a broad cross-section of the industry has been invited to participate. Three meetings have been held and some progress has been made toward the preparation of 'Suggested Standards for Future Designs.' Some of the results to date include:

"1. A list of preferred output ratings.

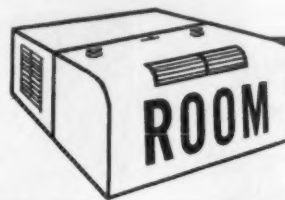
"2. Tables relating rated output to maximum torque, after the fashion of other motor 'basis of rating' standard tabulations.

"3. Selection of standard voltages, frequencies, and full load speeds.

"4. Recommendation of a 65° C. temperature rise, measured by resistance.

"In the matter of mounting dimensions, real confusion was encountered, even after the committee decided to confine its attention only to base mountings as a beginning. A multiplicity of dimensions were tabulated.

"This situation results partly from motor manufacturers having such different base dimensions available, and partly from motor users having different ideas of their own on the matter. There was evidence of all possible phi-



## AIR CONDITIONERS

losophies covering the matching of bases to variable motor lengths. Some motor users were reported as favoring motor adjustability across the base. Others seemed to prefer possible adjustment longitudinally. Still others were using round holes which provided only bolt clearance to place motor and fan or blower in proper relationship to baffles or intakes.

### Committee Considers Type of Base

"The committee is considering the advisability of proposing a base like this on the fan motors, with the distance from the centerline of the motor to the centerline of the slots compatible with easy fastening and matching the basic dimension of a currently established Nema standard. Some makers have announced such a base as currently available.

"With air conditioners provided with slots at 90° to the base, adjustment in both directions could be readily made. It is further proposed to hold the dimension from the all-clear line to the first slot fixed for all motor lengths. A second set of slots might have to be provided on longer motors.

"The committee will be happy to receive comments from the industry on this proposal. We would welcome also some expression relative to shaft height practices so that the standardization could include that dimension as well. Our intent of course is to work out as acceptable a proposal as possible," Ross explained.

### Color Coding for Leads

"Of still further interest to you is the matter of color coding for leads. Again several practices were noted but the following arrangement seemed to involve the least amount of change.

	Common	High	Medium	Low
2-speed	White	Black	X	Red
3-speed	White	Black	Blue	Red

"Some prior plans used green. In this schedule it has been omitted because that color has been reserved in the National Electrical Code to indicate an internal ground lead.

"While we are on the subject of leads, may I emphasize the often-expressed desire of motor people to get out of the lead business. Almost endless combinations of lead material, type, over-all length, rip length, strip length, and terminals are requested. In most plants each new combination calls for new identification numbers at least for the lead, the stator assembly, and the motor.

"Many a group of four or five

similar models could be reduced to only one, were it not for leads. Twenty-five per cent of the special models owe their existence to various lead requirements. Fifty per cent of the specials have different leads in addition to other variations which set them apart. Numerous attempts have been made to obtain a low-cost terminal arrangement to eliminate leads as part of the motor. So far no satisfactory method has appeared.

### Quietness of Operation

"As a final point, one in which there is a maximum of common interest and mutual responsibility, I want to discuss quietness of operation.

"Let's look at the motor first. The shaded-pole motor has been considered by many designers and users as an inherently noisy device, and the motor industry has built plenty of them through the years that support that belief. Later designs, however, are proving to be quiet, not only at no-load, where much rather non-indicative testing is done, but at start and all the way up to full speed. As a matter of fact, at this stage, the conventional distributed winding motor must look to its laurels.

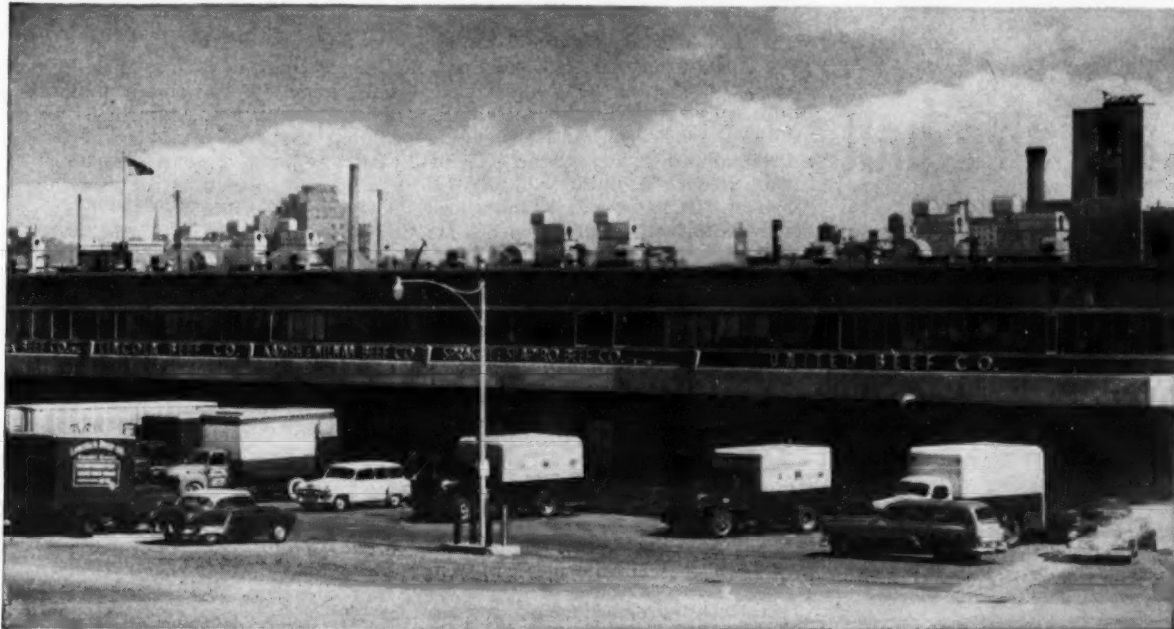
"Such designs continue to be compromises to achieve the best combinations of performance characteristic, but significant progress has been made. The improvement also results from better control of end motion of the rotor in the motor. Over-all noise has been reduced 10 to 15 decibels in recent months in double as well as in single bearing styles.

"While lower noise levels and more even motor quality will help produce increased acceptance in the final product, let us not overlook the responsibility we share here in the matter of motor, fan, and blower application engineering.

"For a long time motors will continue low-level electromagnetic disturbances. Some tie back directly to the motor response to the supply frequency. Others may be higher frequency tones not eliminated by geometry or other techniques. Slot combinations and mass distributions produce mechanical and electrical resonances.

"When they are present in a motor, even at low levels, there is always the possibility that some sympathetic part of the fan, blower, or case will respond with sufficient vigor to give a new customer a bad time.

"Resiliently mounted motors have traditionally helped greatly to achieve acceptability in this respect. More recently, resiliently mounted fans have helped too.



Massachusetts Wholesale Food Terminal is one of the world's newest and largest cooperatively owned meat plants.

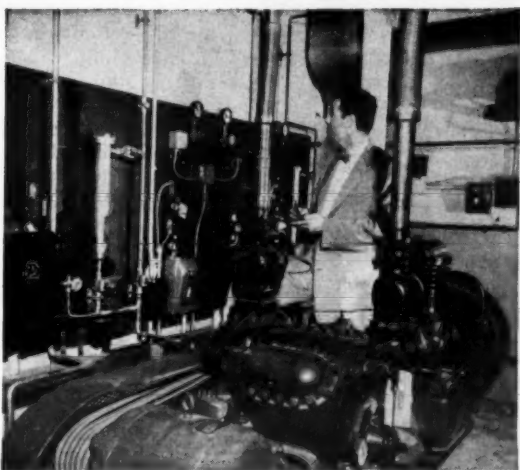
## controlled cold refrigerants

The current day's supply of meat is kept in a shipping and fabricating room at a comfortable-to-work-in 50°F. The architects and engineers recommended for this type of installation refrigeration systems using Du Pont "Freon" fluorinated hydrocarbon refrigerants to meet all requirements.

### WHY DU PONT "FREON" REFRIGERANTS WERE CHOSEN

"Freon" refrigerants are completely safe—they minimize the danger of food contamination that existed with earlier refrigerants. Also, the compactness of systems using "Freon" refrigerants meant that more space could be put to profitable use.

Whatever your own refrigeration or air conditioning needs, you'll find a "Freon" refrigerant that fills them perfectly. These products are produced under strict laboratory control to guarantee their uniformity and quality. They're safe—nonflammable, nonexplosive, virtually nontoxic. When you recommend units designed for operation with Du Pont "Freon" refrigerants, you can feel confident that you are serving your clients' best interests. Get further information by writing to E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



Checking one of the 63 compressors in building "A," all of which use "FREON" refrigerants.



# FREON

SAFE REFRIGERANTS

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants



BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

Pocket cooler profits

with INTERNATIONAL AIR CONDITIONER COVERS

MADE OF Firestone Velon

2,000,000 air conditioners already sold . . . 1,500,000 predicted for this year! Here's your chance for cool, EXTRA profits. Sell the first and finest . . . sell INTERNATIONAL Air Conditioner Covers, made of heavier gauge, trouble-free Firestone Velon. Get the jump on the market . . . let us show you how with our handsome cooperative advertising plan . . . get the facts today.

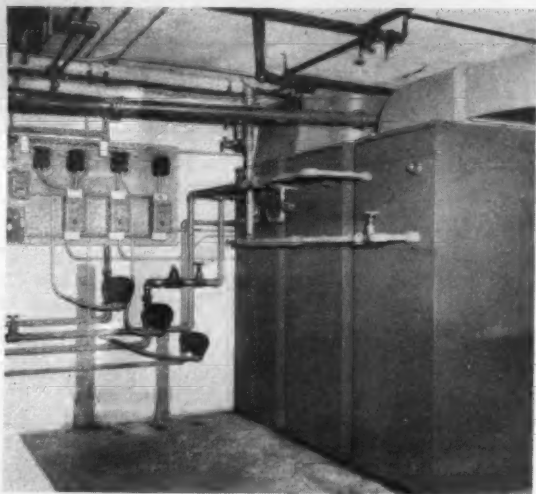
Retails from \$6.45 to \$8.45.



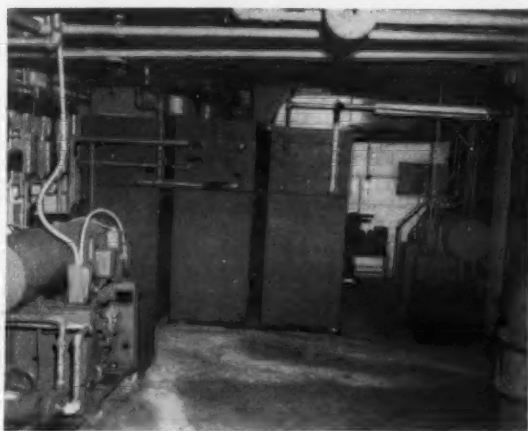
27 styles to fit every leading make from 1/3 to 1 ton, 1951 to 1954 models.

INTERNATIONAL COVERS, INC.  
39 GREAT JONES STREET, NEW YORK 12, N. Y.

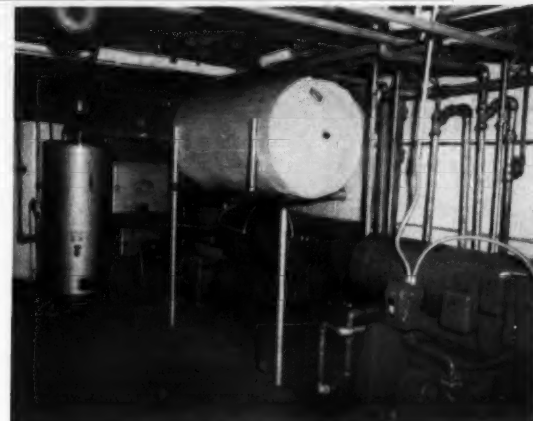




BEFORE: This is the way the three heating and cooling units were hooked together originally to cool the kitchen and dining room at Maria's Pizzeria in Detroit.



AFTER: When the water chillers were added to step up the cooling capacity, this is how the piping was revised. Note that two units are coupled to carry the normal load. The third unit—on the right—is divorced completely from the other two and connected to its own water chiller. It is used for heavy heat load periods only.



REMAINDER OF EQUIPMENT is grouped neatly along one wall. The two 7½-ton water chillers handling the two cooling units are in the foreground. Hot water storage tank is mounted above one chiller. Gas furnace, operating on gas from Maria's own well, is beyond.

### When Well Proves Unreliable

## Water Chillers Save Day at Maria's Pizzeria

DETROIT—When Frank Mencotti, manager of Maria's Pizzeria here, installed an all year air conditioning system using well water for cooling and a hot water boiler for heating, fired with gas from his own well, he had quite a deal. No bills for cooling and heating beyond that for electricity to drive the blowers of the air conditioning units.

Mencotti still has a good deal

even though he now has to pay higher electric bills than at first planned in order to have effective air conditioning.

A detailed story of the original installation in Maria's was published in the Nov. 2, 1953 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Donald J. Luty, head of the Luty Furnace Mfg. Co. here, manufactured and installed three cooling

and heating units rated at 6 tons each to cool and heat the 150-seat dining room and the kitchen. Two units handled the dining room and one handled the kitchen.

Cooling was to be entirely by 52° well water from a 132-ft. deep well. Eight row cooling coils (instead of the usual four row) were used in the construction of the air conditioning units in order to make this possible. The well was

to supply 10 g.p.m. for each air conditioner or a total of 30 g.p.m. for all three units.

However, the best the well would produce was 15 g.p.m. and the temperature was 54° instead of the expected 52°. The combination of these circumstances reduced the capacity of the three units from the planned 6 tons to 2½ tons each or a total of 7½ tons for the three. The air handling capacity of each air conditioning unit was 3,000 c.f.m.

As a matter of fact, even with the reduced capacity, the system was able to cool the building itself on the hottest days, but when the dining room filled with customers and the pizza oven got going strong the temperature slowly rose.

It was suggested that another well be drilled, but there was no assurance that the result would not be only to divide the capacity of the water vein between the existing well and the proposed new one.

### THE BETTER SOLUTION

Luty then showed by a simple calculation that with the total well water delivery at 15 g.p.m. and the total cooling capacity at 7½ tons, a water chiller having a capacity of 7½ tons could be installed to reduce the well water temperature 12°, from 54 to 42. This would double the capacity of the air conditioners since there was ample coil depth (8 rows) and air handling capacity (3,000 c.f.m. per unit) to make good use of the colder water.

Furthermore, the water discharged from the air conditioners would still be amply cold and in sufficient quantity to cool the condenser of the water chiller. In effect, a 7½-ton water chiller would be used to obtain 15 tons of cooling. City water would not be required. Mencotti agreed and a 7½-ton Acme water chiller was installed in April so as to be ready in plenty of time for hot weather.

The first chance to test the new installation came during an unseasonably hot Saturday evening early in May with a large crowd in the dining room. Everything worked according to plan and Mencotti was well satisfied. The dining room temperature was being held about 10° below outside temperature with a full house and the pizza oven going full blast.

### CAN'T RELY ON WELL

If the well could have been depended on for an uninterrupted flow of water this would have been the complete solution of the problem. Unfortunately, however, it was learned later that even 15 g.p.m. could not be assured continuously under all conditions. Pump troubles also developed oc-

asionally, it was pointed out.

Mencotti decided that he could not risk the success of his business on a temperamental well and water pump. Although one additional chiller would have been sufficient to handle all ordinary loads he ordered the installation of two more so as to have one in reserve for emergencies and to act as a "booster."

Luty complied by installing two more Acme 7½-ton water chillers and by making the piping hook-up so that the load could be carried with any one of the three machines shut down. Instead of the "series" flow of the original hook-up the piping was changed to the more conventional arrangement whereby water pumps circulate chilled water through the evaporators of the chillers and the coils of the air conditioning units.

### HOW SYSTEM WORKS

To start the system, a toggle switch is thrown, bringing on the blower of one air conditioning unit, which thereafter runs continuously to maintain air circulation and to provide ventilation by means of the fresh air intake. This operation also energizes the control panel, putting the thermostat in the circuit. When cooling is required the other two air conditioning units start and the water chillers and circulating pumps start with them. Well water can now be used to cool the condensers of the water chillers where its 54° temperature makes it considerably more effective than city water at the 72° temperature reached in August.

However, since all three chillers operating at once would overtax the well's capacity, even considering the colder water, and with the well's temperamental history in mind, Luty had a connection provided so that the system could be operated entirely on city water. On the other hand, in case of an emergency shortage of city water, the system can be operated at reduced capacity with the well water cooling the condensers.

# 1

No. 1 Requirement—in any size unit

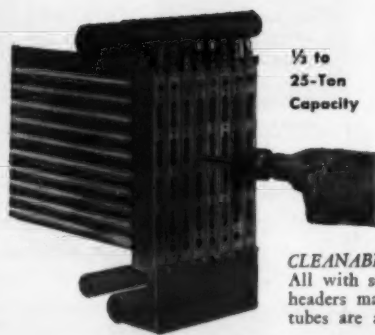
an HM

## CLEANABLE

## CONDENSER

Water-Cooled  
Double Tube, Counter-flow

Regardless of whose condensing unit you buy—and regardless of its size—your first "must" is to insist that it have a CLEANABLE (water-cooled) condenser to help you maintain new-unit efficiency indefinitely. When you realize that use of a simple spiral tool, doing a thorough mechanical cleaning job, can always restore copper-water surfaces to their original heat-exchange efficiencies, you won't settle for anything less than a cleanable condenser. And especially so now since most major manufacturers recognize the demand for "Cleanable", and are equipping their units accordingly. Remember too, you can now count on surprisingly low initial cost that is made possible by Halstead & Mitchell's tremendous high productive capacity.



½ to  
25-Ton  
Capacity

CLEANABLE—in all size capacities. All with seamless copper tubes, brass headers machined and brazed. Water tubes are accessible from either end.



## Halstead & Mitchell

Wholesalers in Principal Cities—Write for descriptive literature

OFFICES: BESSEMER BUILDING • PITTSBURGH 22, PA.

## ROTARY SEAL

### Replacement Units

Available in a wide size range for Commercial, Semi-Commercial, Air Conditioning and Home Refrigerators.

EASY TO INSTALL • ECONOMICAL

AT ALL LEADING JOBBERS

2026 NORTH LARRABEE STREET  
CHICAGO 14, ILLINOIS, U.S.A.



## Immediate Cooling of Pork Carcasses After Slaughtering Improves Quality Of Cured Meat, Experiment Indicates

FAYETTEVILLE, Ark. — By chilling pork carcasses as soon after slaughter as possible, higher quality cured meat is obtained, it has been concluded from tests conducted at the Arkansas Agricultural Experiment Station here.

In Arkansas it was found that after hogs are slaughtered on the farm as much as four hours elapse before the pork reaches refrigerated curing plants or freezer locker plants offering custom curing.

A study was therefore instituted to determine what effect the four-hour delay in chilling the carcass had on palatability and quality of the hams and shoulders.

Ten hogs from the station herd were slaughtered and the carcasses were split down the middle of the back. Half of each carcass was placed immediately in a chill room at a temperature of 30 to 33° F. The other half was placed in a room adjacent to the slaughter room where air temperature was 80° F. Here they remained four hours before being placed in the chill room where chilling then proceeded for 36 hours.

### 2 CURING METHODS USED

Hams and shoulders were cut from each carcass and treated either with a dry salt or a dry sugar curing. (Sugar-cure mixture was made up of 8 lbs. of salt, 2 lbs. brown sugar, and 2 ozs. salt-peter.) Curing lasted two days per pound or an average of 30 days.

After being cooked, the meat was scored for aroma, flavor of lean, juiciness, texture, and tenderness on a score card ranging from one to 10, with 10 representing the best score.

Reporting results, M. C. Heck and E. S. Ruby of the Experiment

Station staff said aroma was more desirable in salt and sugar-cured hams and shoulders that were chilled immediately following slaughter, the average score being 6.19 for immediate, as against 5.57 for delayed chilling.

### FLAVOR OF LEAN AFFECTED

Flavor of the lean was greatly affected by delayed chilling, it was found, and it was suggested that when pork carcasses cannot be chilled immediately following slaughter, the hams and shoulders should be salt cured.

When chilled immediately, either a sugar cure or salt cure may be used without affecting quality of the meat. When not chilled immediately after slaughter and a sugar cure is desired, this cure may be used on hams, but should not be used on shoulders, it was also advised. The shoulder, it was suggested, may best be used in sausage.

### TEXTURE, TENDERNESS NOT AFFECTED

Delayed chilling did not affect texture and tenderness, but hams were found to be more juicy than shoulders. Delaying the chilling for four hours did not lower the juiciness of the cuts but did cause the skins to dry and become hard, it was explained.

"When all factors are considered," the report concludes, "higher quality cured meat is obtained by chilling pork carcasses as soon after slaughter as possible. When chilling is delayed lower quality hams and shoulders may be expected. When the chill is delayed plain salt should be used on shoulder cuts or these cuts should be used as fresh meat or in making sausage."

## 13 Distributors Named For Schaefer Cabinets

MINNEAPOLIS — Thirteen new distributors for frozen food cabinets have been appointed by Schaefer, Inc., manufacturer of ice cream cabinets, frozen food cabinets, and home freezers.

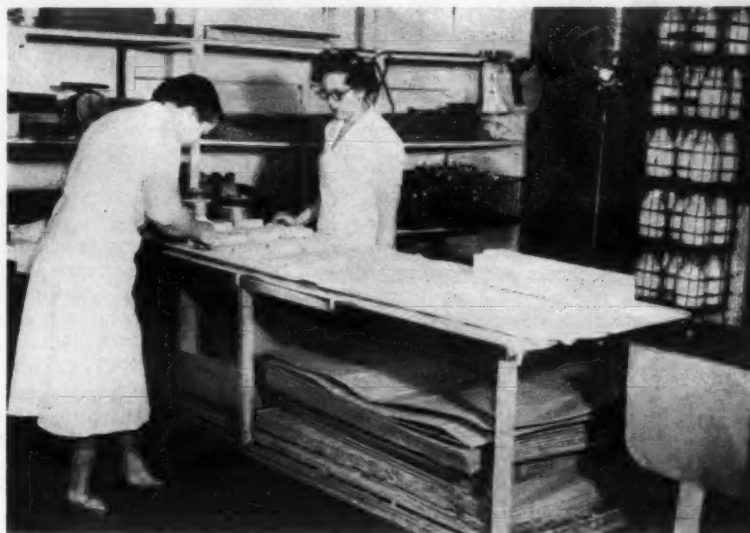
Following is the list announced by H. N. Nafstad, sales manager of the frozen food cabinet division:

T. A. Buscaglia Equipment Co., Inc., Buffalo, N. Y.; Perchan & Co., Cleveland; Ludwig & Patterson Co., Denver; Blackett, Inc., Farmington, Mich.; Waples-Platter Co., Fort Worth, Texas; James Refrigeration Co., Mason City, Iowa; Bessire & Co., Inc., Memphis; Allied Store Equipment Co., Minneapolis; Kennedy & Parsons Co., Omaha, Neb.; Joyce Refrigeration & Equipment Co., Pittsburgh; Dudley B. Parke's Sales Co., St. Louis; L. Paulle Midway Fixture and Showcase Co., St. Paul; and Kennedy & Parsons Co., Sioux City, Iowa.

At present the frozen food cabinet line includes 10 models from 12 to 22 cu. ft. capacity. Featured are double duty cabinets with storage space underneath the display areas. Both glass front open top and sliding glass top models are available.

A new automatic self-defrosting glass front open top model will be announced in the near future, according to Nafstad.

## Commercial Refrigeration



MANY A MANUFACTURER HAS BEEN SURPRISED to find his product used in a way he never expected, and Kold-Hold Mfg. Co., maker of "Hold-Over" plates used primarily to maintain refrigerating temperatures in insulated trucks, has experienced just such a surprise.

The plates contain tubing and a eutectic solution. Usually they are charged by circulating a refrigerant through the tubing at night to freeze the solution and to hold temperatures in the delivery trucks throughout the day. The Sullivan Milk Products Co. of Battle Creek, Mich., however, uses them in working on the company's specialty—decorated ice cream.

The solution in the plates is frozen by putting the plates in the hardening room. The plates are used as slabs on which to cut, decorate, and wrap individual slices of ice cream without permitting the ice cream to become soft. Previously, the Sullivan firm used dry ice, but found it too expensive.



When he's CONVINCED . . . . . but not CLINCHED . .

## Be ready to clinch the sale with COMMERCIAL CREDIT PLAN FINANCING

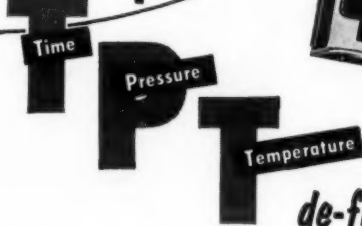
MOST of your prospects need their working capital and usual lines of credit for current operations. To make sure they buy now . . . and from YOU . . . include COMMERCIAL CREDIT PLAN financing in your recommendations. More than 300 offices to serve you nationally. When can we tell you our story? Phone our office in your city or write or wire COMMERCIAL CREDIT CORP., 14 Light St., Baltimore 2, Maryland.

### COMMERCIAL CREDIT CORPORATION

A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$145,000,000 . . . offices in principal cities of the United States and Canada.



Announcing...New  
Paragon



ONLY \$26.00 list, 120V  
\$27.50 list, 240V



de-frost-it with remote control

### 100% Fail Safe

HERE'S big news! TPT de-frost-it actually "thinks" for itself in assuring positive defrost cycles. Completely flexible; 1 to 8 defrost cycles per day. Can be installed to terminate defrost cycle at any pressure or any temperature. Once set, defrost is completely automatic. Length of

on hot gas or reverse cycle electric heat or compressor shut down defrosting.

defrost is self-adjusting for varying loads and atmospheric conditions.

Saves worry about costly food spoilage . . . ends call-backs for re-setting . . . makes any low temperature or normal refrigeration system you sell perform better! Write Dept. 1687 for more data.

TWO MODELS: TPT-303 (Hot Gas) • TPT-305 (Electric Heat)

#### Only Paragon TPT "de-frost-it" gives you all these great features

- **AUTOMATIC DEFROSTING** — Time dial starts defrost cycle; preset rise in Pressure or Temperature terminates defrost cycle.
- **100% FAIL-SAFE PROTECTION** — Exclusive! 45-minute termination dial setting:
  1. Protects against low ambient, gas shortage and low pressure.
  2. Protects against failure of Pressure/Temperature cut-in switch, or improper defrost termination setting.
- **REMOTE CONTROL** — install the TPT in any convenient location and connect the Pressure/Temperature cut-in switch with a single pair of wires.
- **HEAVY-DUTY Telechron Motor**—long-life, industrial type.
- **AUTOMATICALLY REDUCES COMPRESSOR DOWN TIME.**
  - ✓ May be top connected. Ample wiring gutter on side and bottom.
  - ✓ Defrost cycle may be manually started at any time with automatic termination.
  - ✓ Auxiliary contact for evaporator fan.
- **Immediate transfer from defrost to refrigeration** if Pressure/Temperature are too high at start of defrost cycle.
- **Pressure/Temperature terminated** if clock stops at exact instant defrost cycle starts, or any time during defrost cycle.

**PARAGON ELECTRIC COMPANY**  
TWO RIVERS, WISCONSIN



## Ad Man Offers 10-Point Campaign To Drive Discounters Out of Town In Ninety Days

NEW YORK CITY—Want to know how to drive the discounters out of town in 90 days?

Well, Charles V. Skoog, copy and merchandising director of Hicks & Greist Advertising agency, has a 10-point program that he thinks will do the trick for the neighborhood appliance dealer.

His idea is based around an advertising campaign in which the dealer tells the public that he will beat the price of any discounter in town if the purchaser will pass up the many services he offers. But if buyers want "guaranteed satisfaction," he can give them that, too.

With the advertisement prepared, Skoog suggests that the dealer do the following:

1. Call the salesmen together and tell them about the plan. Show them proof of the ad.
2. Announce at the meeting a bonus plan for salesmen who sell at list and show them how to do it again.
3. A few days before the ad is scheduled to break, schedule a mailing to the customers announcing the new plan and enclose a reprint of the ad.
4. Have blow-ups of the ad mounted on easels and displayed

throughout the store so the salesmen can use them as "cue sheets" during their pitches.

5. Send reprints of the ad to all the clubs, lodges, and associations in town. Also send copies to the local Chamber of Commerce or Lions Club, asking them to cooperate with his efforts to achieve a fair profit.

6. The dealer should hire and train outside salesmen or saleswomen. His own salesmen should follow leads into the house and the dealer should offer them special bonuses for sales closed between the time the store closes at night and opens the next morning.

7. Before the ad breaks and every spare minute after it breaks his salesmen, on each telephone call, should stress, "We'll beat the price of any discount house in town" story.

8. Tie in with radio or TV and put every advertising and sales promotion force to work for him that his budget will allow.

9. Run a series of ads built around the general theme.

10. Make certain he continues to get from his distributor exactly the things the price promoter is getting—volume discounts, co-op allowances, etc.

## Food Store Contestants Prefer Air Conditioner

WASHINGTON, D. C.—Sampson Distributing Co., Inc., distributor of Fedders unit room air conditioners in this area, has concluded a tie-in promotion with Food Fair stores, resulting in more than 4,000 sales leads.

C. D. Kendall, general sales manager, said that Sampson offered three units to each of three new Food Fair supermarkets to be awarded as traffic-builder prizes.

Customers were asked if they would prefer to win a refrigerator, freezer, or room air conditioner. Responses favored air conditioners by more than two-to-one.

Leads have been turned over to neighborhood Fedders dealers.

## Free Air Conditioning Lures Girls to Hotel

WASHINGTON, D. C.—Free air conditioning for the first 25 girls who will stay a full year at the Meridian Hill hotel here is being offered to attract new residents.

In newspaper advertising and other publicity, Washington's only hotel exclusively for women explains that residents pay 25 cents a day additional to the regular rate for air conditioning. Then at the end of the year, their 365 quarters are returned to them.

## SPECIALTY SELLING METHODS



"HOME AND OFFICE Air Conditioning Clinic" held by Joseph Horne Co., Pittsburgh Carrier distributor, was designed to help the public become better acquainted with air conditioning. Attendance was surprisingly large as a result of advertising campaign, according to the distributor.

## Comfort Cooling Distributor Finds Interest High In a 'Home and Office Air Conditioning Clinic'

PITTSBURGH—A Carrier "Home and Office Air Conditioning Clinic" held by Joseph Horne Co. department store, proved its worth, says M. G. Loder, sales manager, Standard Air & Lite Corp., distributor.

Many people wish to learn how a unit operates, how long it should last, its features, says Loder. Operating costs, depending upon the type of house and installation, run \$50-\$60 in the cooling season.

Surprising was the number of couples who came in together for information. Interest was heaviest from 11 to 4 daily, and very good for Monday night shopping. Clinic was publicized with daily

advertisements in metro Pittsburgh newspapers. Carrier representatives at the clinic were M. G. Loder; John York, field supervisor, Carrier room air conditioners; Roy Timon, Pittsburgh branch manager, Carrier Corp.; Jack Voight, field supervisor, Carrier room air conditioners; Roy Smiles, district manager, James Baney, zone supervisor, Standard Air and Lite, Pittsburgh; Dave Washburn, zone supervisor, Standard Air & Lite, Pittsburgh.

No need to lose valuable space...

**small diner  
uses unique  
outside  
installation**



Mickey's Diner, popular dining spot in downtown St. Paul, needed an air conditioning system, but couldn't afford to give up a square foot of indoor space to accommodate any equipment. To overcome this problem, a usAIRco packaged air conditioner was installed out-of-doors. The 5 h.p. package, housed in a sheet metal enclosure, is mounted at the side of the building.

usAIRco's packaged air conditioner takes 100% fresh air... cools, dehumidifies and filters the air, then distributes it through a short duct into the diner. Inside stale air is removed by means of exhaust fans. By continually cooling fresh air and blowing it into the diner, stale cooking odors never linger in the structure. In addition to Mickey's downtown location, three other diners in this same St. Paul chain are each air conditioned by a 5 h. p. usAIRco

packaged air conditioner. Air conditioning contractor for all four installations is Palen Refrigeration Company, St. Paul.

The packaged air conditioner manufactured by the United States Air Conditioning Corporation is an exceptionally flexible unit. It can be economically installed in or out of doors, single or in multiples, with or without ductwork. It's a compact package with handsome two-tone finish to harmonize with any style of interior decoration. By adding a heating coil, the usAIRco packaged unit becomes an effective year 'round air conditioner. Complete with internal water piping, the usAIRco air conditioner is ready for connection to city water supply or cooling tower. The compressor motor is warranted for five years. All other parts carry a one year warranty. Six sizes are available to fit any air conditioning requirement: from 2 to 15 h.p.

**usAIRco**  
30 YEARS OF AIR CONDITIONING

For additional information write Dept. ACRN 84

**UNITED STATES AIR CONDITIONING CORPORATION**  
MINNEAPOLIS 14, MINNESOTA

## Servel Dual-Purpose Mailing Piece Doubles As Window Display

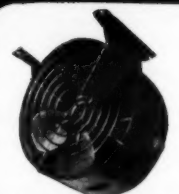
EVANSVILLE, Ind.—A dual-purpose mailing piece which describes a national ad campaign to dealers and doubles as a window display has been devised and distributed by the advertising department of Servel, Inc.

Produced under the supervision of Robert M. Stevens, advertising manager of the refrigeration and air conditioning company, the mailer was dispatched directly to dealers prior to the appearance of each advertisement.

The advertisements include four double pages each in *Life* and *Saturday Evening Post*. The first two folds of each mailer contain suggestions to dealers for merchandising the ad prior to publication, and a reproduction of the ad itself.

The center spread, a blowup reproduction of the ad with dealer identification, is the display poster.

## Buy Peerless FOR PERFORMANCE



**The  
PIE  
PLATE  
UNIT**

### Unmatched for Efficiency

Here is today's outstanding refrigeration value. The Peerless Pie Plate Coil Unit delivers maximum efficiency because it utilizes all of the cooling surface. Its compact design permits it to fit into less space. The power-packed round coil of improved evaporator design is ideally suited for use in soda fountains, direct draw bars, reach-in refrigerators and similar cooling applications. It has all-aluminum casing and brackets; aluminum fin surface on copper tubing; oilless fan motor. Available in three sizes, with or without drain pan. Write for detailed information.

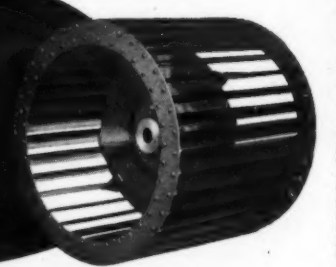
**Peerless of America, Inc.**

1501 No. Magnolia Avenue  
Chicago 22, Illinois, U.S.A.

**LAU**

**Lau manufactures  
blower parts to meet  
your air-handling needs**

**Center  
Suspended  
Wheels**



Heavy gauge steel construction with blades double riveted to end rings and arc welded to center disc. Diameters 18" thru 30". Available with standard steel or Power Lock hubs.

Write for Catalog Page 707-14

**THE LAU BLOWER COMPANY**  
DAYTON 7, OHIO

World's Largest Manufacturers of Air Conditioning Blowers





SERVEL 2-ton Wonderair "All-Year" air conditioner fits into closet of Lord De La Warr hotel room. LP-gas fired, each of the 37 units conditions three additional apartments. Silence of unit's absorption refrigeration system makes it possible for such close proximity to actual living quarters, it is claimed.

## 4-Building 'Motor Hotel' Gets Low Cost, Quiet Air Conditioning In All Areas

WILMINGTON, Del. — An unusual air conditioning system called for by unusual specifications for a "revolutionary" new hotel is keeping guests comfortable at the Lord De La Warr on the outskirts of Wilmington.

Termed a "motor hotel," the \$1,250,000 De La Marr "combines big city deluxe service with roadside motel convenience," according to Don A. Loftus, its builder.

The hotel is the first completed unit of the \$30,000,000 "Five States Wonder Mile" shopping center going up on 100 acres fronting the DuPont Parkway a mile south of Wilmington.

The air conditioning problem was posed by the unique plan of the hotel. The building group consists of four separate two-story units plus a central reception center building. Each unit has 36 rooms or suites, some with kitchen facilities.

Loftus set down the following specifications for the system: Every inch of interior space had to be air conditioned; liquefied petroleum gas was to be used throughout, and maximum silence and minimum use of space was required of all equipment. In addition, the installation had to be made with an eye to the over-all economy of construction of the buildings.

The problem was solved through the use of 37 Servel 2-ton "Wonder-air All-Year" gas air conditioning units, nine in each of the four buildings and one in the reception center.

"The silent, no-moving-parts feature of the direct-fired absorption refrigeration systems in the Wonderairs made it possible to install them in close proximity to the living quarters," it was pointed out.

"In fact, they are fitted into the small utility closets of every fourth apartment. Each distributes conditioned air to four apartments through a small duct system. Each is operated by LP gas.

"The supply ducts are of the normal construction used in any central air distributing system. However, the fresh air intake and exhaust systems of this 100% fresh air installation are uniquely incorporated in the floor construction of the second floors of the four buildings.

"This floor construction, being of concrete and steel, makes it possible to use the spaces between the joists as duct passages, with resulting savings in building costs. It is through these spaces that the two streams of air—the fresh air and the exhaust—are handled."

The installation was made by Schagrin Gas Co.

In addition to air conditioning, the hotel features fireproof construction, radio and television facilities, sun decks, patios, room service, and swimming pool.

## Norling Appointed Mgr. Of Sales Training for G-E Air Conditioning

BLOOMFIELD, N. J.—Earl H. Norling has been appointed manager of sales training and market-



E. H. Norling

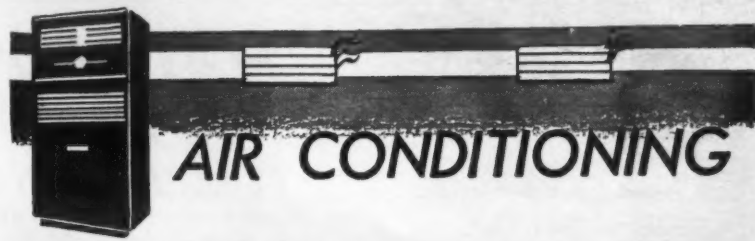
ing personnel for the marketing department of the General Electric Co.'s Air Conditioning Div. according to Jack S. Beldon, division marketing manager.

Norling will work with G-E field representatives and distributors to develop programs of effective selling techniques for the General Electric line of home heating and cooling systems, commercial packaged air conditioners, "Weathertron" heat pumps, and drinking water coolers.

Norling has been with General Electric since 1927. Prior to his present appointment he was manager of education for retail sales of G-E major appliances.

### To Cool Church Bldg.

JACKSONVILLE, Fla. — The new four-story educational and activities building of the First Baptist church is nearing completion. It will be air conditioned.



*Nobody Did It, But It's Done!*

## Air Conditioner Is Operating But Plumber And Electrician Deny Installing Equipment

MEMPHIS, Tenn. — City Court Judge Beverly Boushe has been asked to decide who installed the 3-ton air conditioning unit at the Cranticleer Cafe, 987 Pennsylvania, following the arrest of an electrician and a plumber on charges of installing the unit without a refrigeration permit.

The electrician, Joe Sailors of 4385 Tutwiler, testified he merely sold the unit to S. N. Lefkowitz, owner of the building housing the cafe, and made the proper wiring adjustments. He exhibited an electrical permit.

The plumber, Bruce A. Jordan of 748 Saffarans, testified he only connected the air conditioning unit to the sewer.

He had the proper plumbing permit.

The charges were brought by city officials who claimed the unit was operating and had not been

installed by a qualified person. Before installation, a refrigeration permit is required.

Judge Boushe dismissed the charges when no evidence was presented in court that the unit was installed by Mr. Sailors or Mr. Jordan. The judge suggested that Mr. Lefkowitz should have been in court. The latter was in Florida.

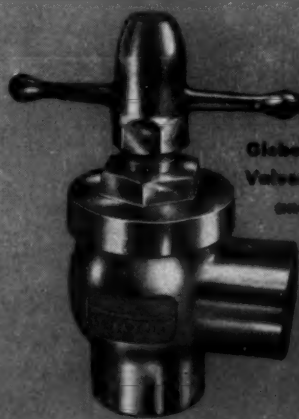
Meanwhile, D. C. Canady, mechanical refrigeration engineer, said investigation of the case would continue.

He pointed out that three permits are required to install units of one and one-half ton capacity and larger.

However, in the case of air conditioning units of less than one and one-half tons which are usually installed in windows, only an electrical permit obtained by a licensed electrician is required, Canady said.

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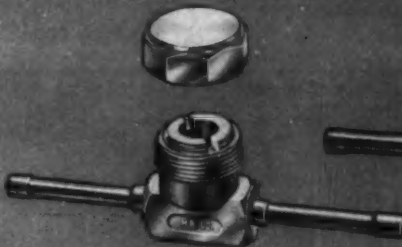


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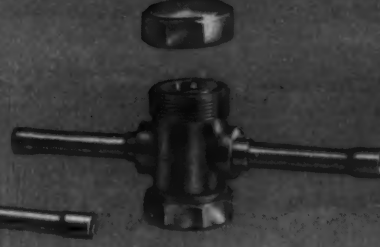


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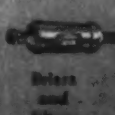
Double Port Extended End — Copper Tube Body Liquid Indicators



Single Port Extended End Liquid Indicators



Double Port Extended End Liquid Indicators



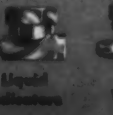
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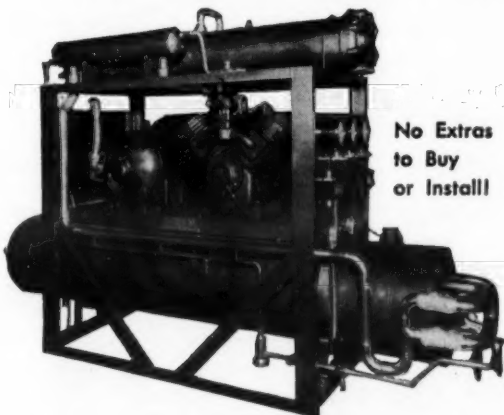
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AUGUST 23, 1954

## Everybody Is Butting Into Everyone Else's Business

Druggists (of all people!) are complaining that supermarkets are selling toothpaste, hair tonic, and ice cream. Druggists don't like this trend.

Moreover: A major supplier of auto and aircraft parts, Thompson Products, is moving into the electronics field. Carnation Milk has branched out to serve color photography and the graphic arts. These are examples of an activity that has the rapt attention of nearly every corporation today.

### Diversification.

There's hardly a large or medium-sized firm in the country which isn't on the lookout for new products or new markets or both.

**Diversification, of course,** is no novelty. In recent years many corporations have been expanding into new lines and seeking out new markets.

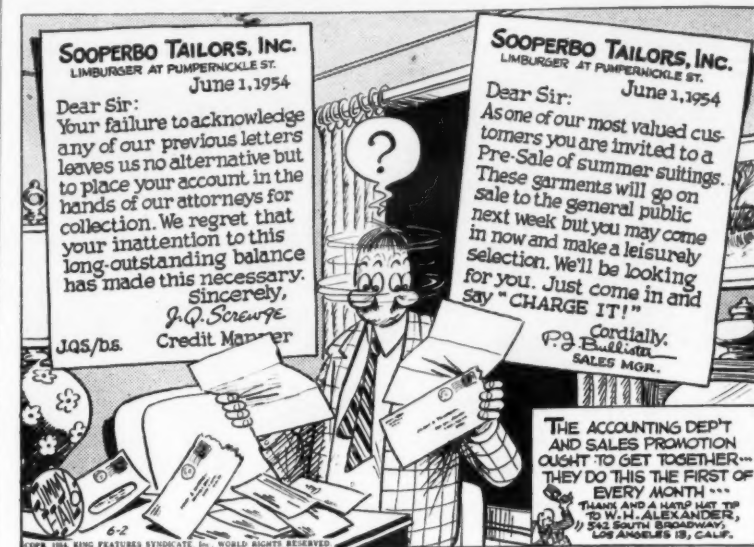
(Leon Henderson described Post-War Planning: "Everybody is going to butt into the other fellow's business, and make it out of plastics.")

In most cases, diversity is regarded as insurance against a drop in one line, as a means of smoothing out seasonal production curves, or as a method of "hedging" against economic cycles.

**Chances of a one-line business** prospering over a long period are not nearly so good as they used to be. Geographical location doesn't mean much anymore. It's difficult to keep ideas exclusive. Public tastes change rapidly, and sometimes alarmingly.

If a new product makes a hit with the public, pioneers are soon faced with considerable competition. Witness the air con-

ditioner field—the number of brand names has quadrupled in the last 23 months.



ditioner field—the number of brand names has quadrupled in the last 23 months.

However: A product that's hot stuff on a Friday may be doomed next Tuesday by the development of substitutes or improved materials. New ideas come thick and fast these days.

**Diversification in many cases** stemmed from World War II experiences.

A successful shift to production of defense goods convinced numerous one-product firms they could make other items, too—utilizing their own management, employees, and plant. Often, diversification was prompted by the desire of companies to hang onto their workers.

The fact that high protective tariffs seemed a thing of the past caused firms menaced by inroads of foreign goods to spread into other fields.

Again, needing good management, not a few corporations bought smaller companies to get it.

**If the field is a relatively new one** with a bright future, the manufacturer may continue to specialize in a single product for some time. Eventually, however, he'll realize that continued growth demands addition of other products or acquisition of another company in order to hold his dealers.

Diversification seldom pays off unless a firm's old line and its new one have something in common.

A new product usually requires a new selling crew. Additionally, an internal system of management controls may have to undergo a major change.

**Still another warning:** A relatively small firm considering diversification should determine whether or not that move will result in a bigger return on its investment (time and money) than greater attention to its primary business would.

This question should be given deep study, too:

Will the return on the new project be sufficiently large to justify the additional attention management will have to give the new undertaking? Will a losing proposition be supported too long because of injured pride?



Carrier Corp.  
New York City

Editor:

I should like to take exception to a statement made in an item with dateline of Sao Paulo, Brazil, in the AIR CONDITIONING & REFRIGERATION NEWS, of July 26, 1954.

In the first paragraph of the article in reference on Page 11 of this issue, you will note the statement that "First building in Brazil to have a high pressure Conduit System of air conditioning. . . ."

Carrier Corp. pioneered the high pressure conduit system, patented under the renowned name of "Conduit Weathermaster System." The first installation of this type made in South America was in the year 1946, when three office buildings and one hotel were equipped with the Carrier Conduit high pressure system. In the following year, three additional buildings were fitted with our system.

In all, we have made nine installations in Brazil of the Conduit System all prior to the National City Bank building, which is described in the article in reference.

The installations to which I refer above are the following:

Johnson & Johnson  
Brandao Magalhaes & Cia. Ltd.  
Banco De Bahia  
Hotel Copacabana, Palace Annex  
Ceppas Predial Ltd.  
Caixa Previdencia  
American Bible Society Bldg.  
Ed. Humberto Menexcal  
Banco Industrial Brasileiro  
I feel that you should, in the next future issue, insert a notice to the effect of the misleading statement made in your article of July 26th.

ARTHUR P. RYNEARSON

John Inglis Co., Ltd.  
Halifax, Nova Scotia

Editor:

I have just read through the July 26 edition of your paper, or to be more precise your column "Inside Dope." I always start reading your paper that way.

The poems by Cordia Rostock are very good indeed. I wanted you to know that I thoroughly enjoyed the one entitled "Mine has all the Possibilities of Becoming a Complete Stranger."

But I always enjoy your column thoroughly!

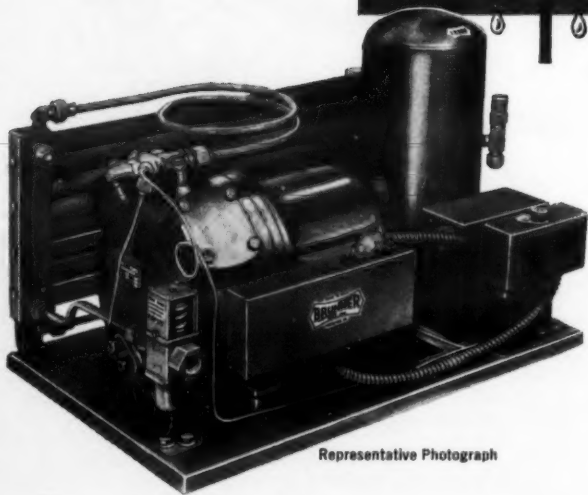
W. LEUCHES

## Big News from Brunner...

a new line of

**WATER-COOLED** BRUNNER-METIC

Semi-hermetic condensing units



Representative Photograph

Now available  
in 8 models

Commercial and Low  
Temperature Applications  
 $\frac{1}{3}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1 H.P.  
**WATER-COOLED**

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**AIR-COOLED MODELS**  
from  $\frac{1}{4}$  to 1 H.P.  
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Depend upon Brunner to give you a completely dependable water-cooled semi-hermetic condensing unit! These new Brunner-metic Water-Cooled jobs are especially designed for easy on-the-job servicing — have dozens of engineering improvements that save your time — and your customers' money!

### LOOK AT THESE FEATURES . . .

Compact, rugged assembly . . . with cleanable water-cooled condenser . . . suction gas return helps cool motor and compressor for longer life . . . suction and discharge valves in one common plate, easily replaced by simply removing cylinder head . . . oil snifter plugs permit positive check on oil level in compressor . . . bolted construction throughout, for fast and complete field take-down.

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See your Brunner Wholesaler for full details and prices on these great new BRUNNER-METIC Condensing Units — or **MAIL THIS COUPON TODAY.**

THE BRUNNER COMPANY, Dept. A-844, Gainesville, Ga.  
Please rush complete information and prices on  
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City..... State.....

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SINCE 1906

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the National  
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## Service & Supplies

### 5 Steps In Selecting Motor Protectors For Hermetic Units Outlined by E. W. Scott

SEATTLE—Selection of motor protectors for hermetic units is no simple matter because the units are subject to many and varied conditions, points out E. W. Scott, supervising engineer, Westinghouse Electric Corp.

Not only are the motors in hermetic units subjected to wide variations in loads, "but in addition they are subjected to wide variations in the available means for cooling, especially if suction gas cooling is utilized," he told the American Society of Refrigerating Engineers at its meeting here.

He cited a few examples of the conditions a given hermetic unit is subjected to, including these:

"A larger hermetic compressor used in a window air conditioner operating in a west or south window during a hot afternoon at 55° F. evaporating temperature and 215 p.s.i.g. discharge pressure and then operating on a reverse cycle system for heating in the winter with the discharge pressure around 100 p.s.i.g. and the evaporating temperature near 15° F. for an 'F-12' system."

Scott commented, "although the problems involved in applying protectors to these conditions are complex, they aren't insurmountable."

"The operating conditions that affect an hermetic compressor-motor include, among others, the range of ambient temperatures that may be encountered, the range of evaporator temperature

that may result from normal or adverse conditions, the temperature of the suction gas returned to the compressor, the line voltage range to be expected, and abnormal conditions affecting the external cooling of both the compressor and the condenser," he explained.

"Variations in any one of these factors may not greatly complicate the selection of a satisfactory motor protector. However, variations of combinations of these factors do complicate the selection."

A motor winding temperature of 179° F., for example, can occur in a typical 1/4-hp. hermetic unit at 0° F. evaporating temperature, 4.1 amperes, and 115 volts, he said.

Almost the same winding temperature (180° F.) also occurs when the evaporating temperature is 40° F., the line amperes at 7.7, and the voltage down to 100 volts.

"For these two conditions, the motor protector would be acted upon by essentially the same winding temperature, but the difference in line amperes greatly affects the winding temperature the protector will permit," he explained.

Five steps in selecting more protectors were outlined by Scott:

1. A thorough analysis of the operating conditions and an understanding of how variables affect the entire refrigeration system and are reflected in the effective temperature of the protector.
2. Establish the proper test conditions.
3. Study protector operation

and how variables affect this operation.

4. Run actual tests on the compressor with a dummy or extra high rating protector in place.

5. Consider the available protectors and select the disc temperature and heater resistance that will give the best available compromise for all the above conditions.

### Gustin-Bacon Appoints Two District Managers

KANSAS CITY, Mo. — Gustin-Bacon Mfg. Co. here announces the appointment of two new district managers: C. Weston Goode for the southeastern United States and H. J. Smith for the Kansas City sales division.

The company manufactures "Ultralite" and "Ultrafine" glass fiber insulations, "Gruvagrip" and "Rolagrip" pipe couplings, and railroad supplies.

Goode, Atlanta sales representative for Gustin-Bacon since 1944, is in charge of the newly opened district office at 2025 Peachtree Rd., N. E. Atlanta.

Smith has been with the company since 1949 as representative in Louisville and St. Louis. In his new position, he will direct sales in Colorado, Wyoming, Nebraska, Kansas, Oklahoma, Arkansas, Texas Panhandle, southern Illinois, western Tennessee, and northern Mississippi.

### Uses for Liquid Chillers Shown In Acme Catalog

JACKSON, Mich.—Broad fields of air conditioning and refrigeration applications for Acme "Flow-Cold" packaged liquid chillers are described in a new catalog now available from Acme Industries, Inc. here.

As examples of industrial application, brief histories are given on the use of these complete, small refrigeration machines for controlling solution temperatures in drug manufacture, for cooling welding tips and machine tool coolants, and for process cooling in the food industry.

Many other industrial temperature control problems, solved by Flow-Cold, are listed.

### Servel Offers Electrical Check Test Manual

EVANSVILLE, Ind. — Publication of a new booklet, "Electrical Check Test Manual," was announced recently by John Zubrod, product manager of the commercial refrigeration division of Servel, Inc.

The booklet is pocket-size, and is intended to serve as a handy reference guide for checking the electrical systems of hermetic power units. It is offered, without charge, for the use of commercial refrigeration wholesalers, dealers, contractors, and service engineers.



### 'Agile' Kit Has Tools for Proper Fabrication and Welding of Plastics

BEDFORD, Ohio—The "Agile" welding kit, containing basic tools necessary for proper fabrication and welding of plastics, has been introduced by the American Agile Corp. here.

Housed in a metal partitioned tool box, the kit contains the electrically-operated Agile hot-gas welding gun with fittings, flow-meter, and tubing, contour marker for cylindrical components, porosity spark tester, plastics scribes, cutting knife, and other parts.

The kit also includes two books, "Welding of Plastics," and "Plastics Welding Manual" written by authorities on the subject.

### NEW PRODUCTS?

Turn to "What's New" Page for useful information on new products. Use Key No. for fastest service.

DETROIT SOLENOID VALVES give you

# built - in protection

against moisture, dirt, leakage and noise!

No. 683 Solenoid Valve  
With Built-In Strainer In All Models

- Capacities to 5.1 Tons Freon-12.
- Plastic-imbedded waterproof coil.
- Quiet operation—no A.C. hum.
- Rugged forged brass body.
- Connections available for flare, sweat or pipe thread applications.
- Sturdy mounting boss.



683 in forged brass body available with either flare (1/4" S.A.E. for 1/4" x 1/4" reducing nut) or sweat (1/4" or 1/2" O.D.) connections.



Barrel type internal strainer supplied with sweat and pipe thread models.

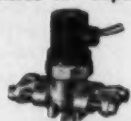


683 also available in cast brass body with 1/4" female N.P.T. inlet and outlet connections.

Other Detroit Solenoids for Capacities To 50 Tons F-12



No. 681 Capacities to 8.7 Tons F-12



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FIT WITH  
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**FIT TO CUT YOUR PRODUCTION COSTS**

Only the Remco SUPER-FLO Filter-Drier can offer you the real production economy of your choice of end fittings. SAE Flare Fittings . . . when convenience in field replacement of units is paramount. Sweat Connections . . . when your plant facilities make sweat connecting most practical . . . and you wish to cut unit costs by 25%. Inverted Openings (\*for Silver Brazing) . . . when permanence is a must, when assembly costs must be cut, and when you wish to reduce unit costs by 36%.

**GUARANTEED LOWEST PRICE—HIGHEST QUALITY**

SUPER-FLO is guaranteed to be the lowest price Filter-Drier for original equipment in production quantity orders on the market today. Here's all the famous Remco quality . . . massive fiberglass depth filters, famous molded Remco drying elements (for high temperature moisture and acid removal), and spun-end copper shells.

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AVAILABLE TO THE  
TRADE THROUGH  
WHOLESALE  
EVERYWHERE



HELPS to dealers include detailed engineering service. Dale D. Sawyer, in charge of layout and design for Salina Supply Co., ponders over the rough sketch of a residential air conditioning job which a dealer had drawn on a piece of wood.



MAINTAINING a large inventory of replacement parts is essential for a wholesale distributor remote from the factory, as is Salina Supply Co., Carrier distributor. Here Jim McKim, left, who is in charge of the firm's air conditioning operations, checks supplies with Clarence "Pete" Peterson in one section of the parts warehouse.

takes longer than 24 hours, usually much less in emergencies, according to McKim.

He recalls an occasion last year when the motor driving a 10-ton air conditioner in a bank some distance from Salina was burned out when lightning struck the bank during a thunderstorm.

"Lightning struck at 3:25 p.m. but by 8:30 that same night we had a new motor in place and the unit operating, thanks to our complete stock and our enterprising dealer."

#### Pleased Bankers O.K.

##### Several Other Jobs

Bank officials were so pleased that they gave the nod to several other air conditioning jobs in the town.

"When we do a good job on parts and service, we find that our dealers are inspired to do likewise," comments McKim. "You can't get away from service, no matter how you slice it."

Such service costs money, but Salina Supply encourages its dealers "to give people a quality product, a quality job, and quality service at a reasonable price."

"We expect both the dealer and ourselves to make a fair profit. After all, that's what we're in business for," McKim says.

On the problem of a competitor's quoting a lower price for a job, McKim says that "just the other day, for the first time, I tried using an answer that I've often heard salesmen talk about but never seen employed."

#### Defense Against Price Cutter

"When the prospect the dealer and I were calling on said, 'I can get such and such make for \$150 less,' I commented, 'well, that dealer and manufacturer ought to know better than I do what their product's worth.'"

"It worked, too," McKim reports. "Our dealer got the order—at his price."

Selling at a reasonable price pro-  
(Concluded on next page)

#### 50 Home Systems In Town of 4,000!

## Distributor Works Closely with 73 Dealers To Build Impressive Residential Sales Volume

By C. Dale Mericle

SALINA, Kan.—Residential air conditioning, to most people in the industry, represents a new market with vast potential.

But it's old stuff to Salina Supply Co., wholesale distributor here, and its 73 dealers scattered throughout the northwest part of Kansas.

They've been promoting and installing residential jobs since 1946,

and were asking manufacturers for year-round residential package units long before any were available.

In terms of number of units, Salina Supply and its dealers probably don't represent any startling records in the residential field. In terms of the market potential of the area, however, their performance should put them right up

front in the money, percentage-wise.

Dealers like Brenner Sheet Metal Co., for example, in the town of Clay Center, Kan., last year installed 20 year-round residential package units, in addition to 30 "add-on" cooling units tied into an existing furnace.

Fifty residential cooling jobs may not seem large to some contractors. But Clay Center is an attractive little town with a population of a mere 4,000!

As a comparison, in the city of Detroit last year—population about 1,000,000—there were 33 residential jobs installed.

And then there's Hickey Sheet Metal Co. in Great Bend, Kan. Population here is 10,065. Hickey has installed 31 year-round packages and many more straight home cooling jobs in that community.

#### Residential Sales Are 48% of Volume

Thus it is not surprising when Jim McKim, who heads up Salina Supply Co.'s air conditioning and refrigeration operations, says, "Residential air conditioning was 48% of our air conditioning and refrigeration dollar volume last year."

The company has been a distributor for Carrier Corp. since 1938, and was one of the first strictly wholesale distributors in the field.

Headed by Carl Davis, president, the firm wholesales heating and plumbing equipment in addition to the Carrier line. The firm does no contracting itself. It does, however, give its dealers the benefits of its engineering experience and will lay out and engineer jobs if the dealers desire, McKim explains.

"Most of our dealers have been with us 15 years, and some who didn't know a thing about air conditioning now engineer and service jobs by themselves," McKim says.

This is partly the result of conscious effort by both the distributor and the dealers, and partly the result of circumstances, he indicated.

#### Train Dealers on Job

"We serve a large territory and we're remote from the factory. Some of our dealers are a good many miles from Salina, so we can't ask them to come into our place once a week, say, for sales and service meetings. Instead, we train our dealers right on the job," McKim explains.

"One of our sales and service engineers or myself will actually work right on the job with a dealer who has an installation or service problem, explaining and demonstrating to the dealer what needs to be done as we go along. The dealer learns quickly this way."

Salina Supply does not maintain a service department in the usual sense. But McKim and other representatives of the company like John Zimmerman, J. E. Compton,

ANOTHER **d/h** "PLUS!"

**"HOT DIP"** Galvanizing

AFTER FABRICATION ON ALL

**PERMA-FAN** EVAPORATIVE CONDENSERS



Installation by Key Refrigeration, Los Angeles.

IT'S SERVICE-FREE PERFORMANCE with Perma-Fans—ever since D-H pioneered the blow-thru principle of operation, back in 1937! NOW, new and proven advances give you an expanded Perma-Fan line:

- In tonnage ratings from 5 to 105
- For indoor or outdoor installation
- Choice of refrigerants: Freon, Ammonia
- "Hot Dip" galvanizing on ALL surfaces



Particulars? Request Catalog PF C-3.30.

**drayer-hanson** INCORPORATED

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(A Subsidiary of United States Radiator Corporation)

A NEW D-H JOB:  
Edison Company business offices,  
Ontario, California  
PF-304

Jr., Ray Kubitschek, R. E. Sharpe, William Kane, and James Holloway are "servicemen as well as salesmen and practical engineers," as McKim puts it.

Each will have plenty of sales literature in his car, but there'll also be a slide rule, tool box, and test gauges and instruments.

#### 'Service Is Key to Many Sales'

"Service is the key to many sales," McKim is convinced. "A successful service job in correcting a problem not only makes that customer satisfied but leads to further sales, thanks to word-of-mouth advertising."

He can recall several instances where time devoted to solving successfully a service complaint so delighted the owner that several other sales which followed were directly attributable to that individual's enthusiastic praise.

A first-hand observation of how Salina Supply Co. representatives knock themselves out to make sure customers of their dealers get good service was afforded this reporter.

McKim took just as a matter of course driving 100 miles to a small Kansas town and back again one day to spend three hours checking a single residential air conditioning job which had been installed by one of the dealers on the basis of a local architect's specifications.

(And we'll bet the heat bouncing off those wheat fields that day was 115° F.)

#### Use Chartered Plane

Often as not, though, to make such hurry-up trips to more distant spots in their territory Salina Supply representatives will fly. The company maintains a chartered plane which is used frequently.

And not only does Salina Supply believe in good service; it insists on quick service. To that end it carries a large inventory of equipment and repair parts.

"We have an inventory of \$10,000 in parts alone for Carrier," McKim says.

The company's stock of parts is large and varied enough to permit immediate shipment to a dealer in any part of the territory. It never

**MERIAM**

**FLOW METERS...**

accurately indicate flow of chilled water supply. Portable Meriam Model A-286 Flow Meter is most often specified.

Shipped complete with valves, piping manifold, over-deflection chamber, 10' flexible hose with quick disconnect fittings and adaptor for pressure taps at orifice flange.

Write Department C-12

THE MERIAM INSTRUMENT CO.  
10994 MADISON AVE. • CLEVELAND 2, OHIO

Here's Harry Alter's **DEPENDABOOK**  
No. 161...  
**1954**

#### REFRIGERATION PARTS and Supplies plus

Electric-Motor Parts, Air Conditioning and Heating

There are over 9,000 items illustrated, described and rock-bottom-priced in our newest DEPENDABOOK. So—get and use this money-saver! Write for your copy to

**The HARRY ALTER CO., Inc.**  
1728 S. Michigan Ave., Chicago 16, Ill.  
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**WHOLESALE ONLY**  
"Harry Alter gives you snappy service."

**GET YOUR COPY AND SAVE MONEY!**





## Distributor Works Closely with Dealers--

(Concluded from preceding page) vides both the distributor and its dealer enough margin so that they can both give good service, he emphasizes.

Residential air conditioning more or less has come naturally to the territory served by this distributor. For one thing, it can and does get extremely hot in Kansas. Summer temperatures of 100° F. and over are taken pretty much as a matter of course in these parts.

In addition to high temperatures, the summer season is long, according to McKim.

"We figure we have five months of cooling, five months of heating, and two months of in-between weather here as a rule."

Thus the heating and cooling seasons are quite evenly balanced.

And fitting hand-in-glove with these conditions is the fact that this section of Kansas generally still has a plentiful supply of cold water for condensing, McKim explains.

### Lots of Cool Water

"We have used a few air-cooled jobs where water was simply nonexistent, but mostly we have an excellent supply of water that runs from 58° to 62° F. in temperature. This means that head pressures rarely go over 125 p.s.i.g. and thus few if any compressors give trouble.

"On the average job we can usually use as little as 3 g.p.m. of condenser water for a 3-ton unit. We don't waste this water," he adds. "We run the discharge to a sill cock and the owner uses the water to sprinkle his lawn."

The operating cost, too, is a favorable factor.

"Even despite the exceptionally low gas rates for heating in our territory, we find that it costs less per season to cool a residence than to heat one."

Although the combination of high summer temperatures, long cooling season, plenty of condensing water, and reasonable operat-

ing cost makes residential air conditioning a "natural" for the territory, it can't be said that the populace has been beating down the doors and demanding it.

### Advertising, Promotion Is Basis of Success

No, the success has been largely due to careful promotion and consistent hard-hitting advertising on the part of distributor and dealers.

"We've helped create interest by 'spotting' critical jobs throughout our territory," McKim explains.

"If we can persuade a leading citizen of a town to let us install air conditioning in his home, the next eight or 10 jobs will come easily. People will come into the dealer then and say, 'I want a unit just like Mrs. Lewis has.'"

No "deals" on the price of such "first" installations are offered, according to McKim. It's simply a question of hard selling.

"Our biggest problem in the residential field now," he says, "is convincing the man who's building a \$12,000 home that air conditioning will be a good investment. We have no trouble at all on that score with the builder of a \$25,000 home."

Just about every residential job that's gone into Salina Supply's territory up to now has been on an individual basis. There have been very few speculative "project" jobs thus far and these have been very small, according to McKim.

### 35% of Residential Jobs Have Been Replacements

"We have hopes, however, of getting some larger ones soon. Just about all the sales of our dealers have been to individual owners. When someone buys a home from a builder, we contact the owner before he builds, if possible, and try to sell him on the idea of installing year-round air conditioning at the start.

"But a fairly high percentage of

our sales of year-round residential package units—about 35%—have been replacements of furnaces."

Extensive advertising in local papers on a cooperative basis with dealers plus promotion and displays at county fairs, home shows, and the like has paid dividends in selling residential air conditioning, McKim believes.

Hottest medium at the moment, though, is television, he says.

"Television is new out here, and so the owners of television sets represent a select market. The average television antenna costs about \$300. Thus the owner must have sufficient income to be a good prospect for air conditioning."

In all its advertising, Salina Supply always ends up with an emphatic tag: "See your local Carrier dealer."

Farmers and their wives are just as interested in such advertising about residential air conditioning as the town dweller, McKim says.

"Percentage-wise, farms have not accounted for much yet on residential cooling, but the number is increasing. It gets just as hot on a farm as it does in town, and the farm wife, particularly, likes to be able to close up her house when a dust storm blows up. With air conditioning she can."

Although the company does an outstanding job on residential air conditioning, its activities in window units and commercial applications also result in respectable sales totals.

"In room units we've doubled

## Residential Air Conditioning

our last year's figure," McKim reported in the middle of July. "Until the heat wave arrived the week of June 18, we were about 2% under last year. Now we've doubled 1953 and will sell out before the season's over."

Speaking of commercial jobs, he says "we're just now getting our prospects educated to buy ahead of the season. We do more commercial air conditioning business now between Jan. 1 and June 1 than the rest of the cooling season."

"Prospects have learned that we just don't have enough dealers to install all these jobs at the same time."

### 73 Dealers Afford Full Coverage of Area

Salina Supply's 73 Carrier dealers (the company numbers 300 or more retailers for all its lines) give the company complete coverage of its big territory.

It has at least one air conditioning dealer in every county, and just about one in every town. Some of the towns are pretty small, and certain counties, too, in terms of population. One county has a total population of 1,252, McKim says.

"If our dealer in one of these very small towns sells only one

unit a year, he's still getting 100% of the business," he adds.

Most of the residential air conditioning dealers in this distributor's territory are plumbing and heating shops and/or sheet metal firms.

"The latter fell into residential air conditioning quite naturally," McKim declares.

Despite the fact that its territory covers many miles, Salina Supply maintains close contact with each of its dealers. A representative calls in person on each dealer at least once every two weeks, although much of the business between dealer and distributor is handled by phone.

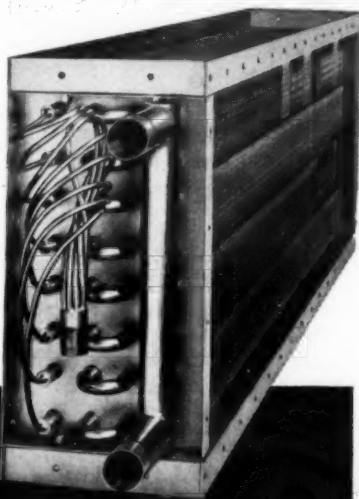
Naturally, detailed records of dealer orders and installations are maintained by the distributor. On a 5 by 8 in. card, which is made out for every unit, are noted the dealer's name and address, date unit is ordered, serial number of unit, job number, etc.

When the unit is shipped to the dealer, the card is placed in another file after entries are made to show the date shipped (to establish start of warranty), and the location of the job. In this way Salina Supply keeps a simple yet complete record of all the jobs sold.

for any air direction

## Tenney AC4 COILS

with Universal Suction Connections



Standard, 4-row, AC4 Coil for air conditioning of stores, homes, and offices... wherever built-up systems are used with or without duct distribution. Available in 5 capacities in 11 popular sizes with F-12, F-22 refrigerants.

Tenney AC4, standard 4-row air conditioning coils are the perfect, standardized line of direct-expansion coils. Construction includes 3/8" O. D. copper tubing; Faceted Fins for greater heat transfer; heavy-gauge steel top, bottom, and end plates (aluminum on request); all copper suction headers; high-temperature, hard solder tube joints; and inert atmosphere inside tubes for clean, scale-free refrigerant passes.

These Tenney AC4 Coils can be sold and installed with complete confidence for any air direction, through universal suction connections. Like all Tenney products they're backed by sound engineering and quality workmanship that guarantees easy installation and customer satisfaction. Ask for Bulletin 103-54.

APPLICATION DATA										
Model No.	Nominal Tons	Distributor Connection	Suction Connection	Flange Size	Flange Hgt.	A	B	C	Face Area Sq. Ft.	Section, Cfm.
AC4-3A	3	1 1/2" O.D.	1 1/2" O.D.	24"	7 1/2"	36"	11 1/2"	2"	1.51	750
AC4-3B	3	1 1/2" O.D.	1 1/2" O.D.	24"	7 1/2"	36"	11 1/2"	1 1/2"	1.34	750
Complete range of models and sizes										
AC4-75C	7 1/2	1 1/2" O.D.	1 1/2" O.D.	36"	11 1/2"	48"	15 1/2"	1 1/2"	3.63	2800
AC4-10A	10	1 1/2" O.D.	1 1/2" O.D.	36"	11 1/2"	48"	15 1/2"	1 1/2"	7.34	3750
AC4-10B	10	1 1/2" O.D.	1 1/2" O.D.	48"	15 1/2"	48"	15 1/2"	1 1/2"	7.30	3750



**Tenney ENGINEERING, INC.**

1090 SPRINGFIELD ROAD, UNION, N. J.

Plants: Union, N. J. and Baltimore, Md.

Engineers and Manufacturers of Refrigeration and Environmental Equipment



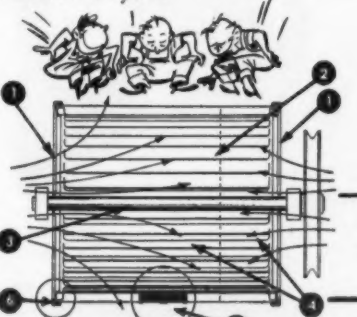
MINIMUM VIBRATION

MAXIMUM QUIETNESS

Added strength of mounting bracket provides more than adequate motor support, insures pulley alignment and reduces bearing wear during use.



Lock sealed end supports give blower wheel the strength needed to permit it to reach its destination point in tip-top condition. The end support principle and Vikamatic Balancing make these units so quiet they have amazed everyone.



"Dealers Applaud the Whisper Quiet Design of **Viking's New BLOWER ASSEMBLIES**"

reports Dave Ahern, Viking's New England Representative

### Check These Enthusiastic Reactions

"Yes, they're all you claim. I'm convinced that you've come up with a blower assembly that meets the home-owner's demands. Our dealers can be confident that the families that buy furnaces and air conditioners with this blower in them won't be bothered with blower thumping or humming. And you've cut the motor installation job in half with this new Open-end Channel on the mounting bracket." That reaction from Armon Le Mire of Gray Supply Company in Springfield, Mass.

"Sure I like it. I like anything that reduces the time it takes me to make an installation. It's easy to see where the new foot design makes it possible for manufacturers to turn blower assembly installation into a production line job. The added strength gives insurance against shipping damage and reduces those vibrations that cause noisy operation". So says Fred Wiedersheim of Fred Wiedersheim in Springfield, Mass.

### Note to Furnace and Air Conditioner Designers:

A request on your letterhead for Viking's "Blower Assembly Workbook" brings you all the information you need for ordering a sample blower for your unit. Write today.

Interchangeable with Viking Blowers now being installed. Contact your Viking Representative for full details!

**Viking**

Air Conditioning

DIVISION OF THE NATIONAL RADIATOR COMPANY

5001 Wulworth Ave. Cleveland 2, Ohio



Viking Blower Packages



Viking Blower Assemblies



Viking Humidifiers

Other Viking Products  
Dehumidifiers  
Attic Fans  
Window Fans



## June Wholesaler Volume Tops May

WASHINGTON, D. C.—June sales by wholesalers of appliances and specialties were 8% above May, but were 11% below the same month in 1953, the U. S. Bureau of the Census reported recently.

For the first six months of the year, their sales were down 12% from the same period of 1953. Inventories were 7% below May and

12% below June of last year.

Based on figures from only four regions of the country, sales by wholesalers of commercial refrigeration equipment and parts were estimated to be 22% over May and even with last June. For the six months, their sales were 5% higher than last year. Inventories were 3% larger than in May and 12% larger than June, 1953.

Kind of Business and Geographic Division	SALES		June 1954 Panel	
	Per Cent Change		No. of Firms	
	June 1954	May 1954	June 1954	Reported
Appliances and specialties wholesalers	-11	+8	116	18,466
New England	-14	+1	14	1,588
Middle Atlantic	-19	+3	23	5,375
East North Central	+6	+24	19	2,813
West North Central	+5	+12	14	2,046
South Atlantic	-16	+5	19	2,290
South Central	-9	+14	10	1,791
Mountain	-24	+8	6	843
Pacific	-2	+5	11	1,720
Refrigeration equipment, parts (com'l)	0	+22	65	2,816
Middle Atlantic	+8	+23	13	999
East North Central	+17	+63	11	199
South Atlantic	+1	+22	22	762
Pacific	-6	-21	10	265

Kind of Business and Geographic Division	INVENTORY, END-OF-MONTH (AT COST)		June 1954 Panel	
	Per Cent Change		No. of Firms	
	June 1954	May 1954	June 1954	Reported
Appliances and specialties wholesalers	-12	-7	92	21,489
New England	-18	-8	12	1,861
Middle Atlantic	-12	-3	17	5,155
East North Central	-16	-16	13	2,937
West North Central	+2	-12	9	1,888
South Atlantic	-9	-9	19	3,851
South Central	+4	-2	8	2,192
Mountain	-35	+3	6	1,310
Pacific	-11	-7	8	2,296
Refrigeration equipment, parts (com'l)	+12	+3	60	4,358
Middle Atlantic	-2	+7	11	1,130
East North Central	+12	+1	11	446
South Atlantic	+20	0	22	1,636
Pacific	+16	+7	9	427

## 921 Home Systems of Over 2 Tons Installed in Houston During '53

Houston lays claim to being the "world's most air conditioned city" and while that claim might possibly be disputed, there is probably no question that Houston has more air conditioning per capita than any other city.

1953 saw gains all along the way in Houston, with the biggest jump being in residential air conditioning systems of 2 tons and over. Installations in this classification in 1953 totaled 921 systems, as compared with 672 in 1952, and 606 such jobs in 1951.

Room air conditioners installed in Houston in 1953 reached a total of 30,125 units, compared with 21,237 in 1952, and 11,984 in 1951.

The total commercial and industrial installations (2 tons and over) in 1953 was 781 units, compared with 696 in 1952 and 536 in 1951.

In the area served by the Central Power & Light Co. headquarters in Corpus Christi, substantial gains were shown in 1953 air conditioning sales.

Central-type systems for residential use in 1953 totaled 298 units in that area, compared with 160 the previous year.

## Atlantans Install 47 Central Air Conditioners in July To Bring 7-Mos. Total to 229

ATLANTA—According to A. H. Thomas, head of the city's heating and ventilating division, Atlantans trying to beat the record July heat installed 47 central air conditioning units last month.

Thomas said that this brings the total central units installed in Atlanta during the first seven months of 1954 to 229. Their combined capacity amounts to 4,116 tons.

Last year, for the same period, permits for 331 units had been issued but for a smaller total capacity of 2,463 tons.

## New Hotel In Buffalo To Be Air Conditioned

BUFFALO—A completely air conditioned hotel will be erected in the downtown Buffalo area at a cost of about \$500,000. It will be known as the Towne House, according to George E. Weichmann, president of Airway Hotel, Inc.

The structure will be two stories high and contain 72 units. Its 30,000 sq. ft. of space will contain a restaurant and a coffee shop.

# STATISTICS

## Approximate Sales of Electric Air Conditioning On System of Houston Lighting & Power Co.

Year	Residential				Commercial & Industrial			
	Central (2 Tons & Over)		Room Coolers		Central (2 Tons & Over)		Room Coolers	
	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1923	...	...	...	...	1	80.00	...	...
1925	...	...	...	...	1	155.00	...	...
1927	...	...	...	...	5	550.00	...	...
1928	...	...	...	...	3	139.00	...	...
1929	...	...	...	...	2	160.00	...	...
1930	...	...	...	...	1	12.00	...	...
1931	...	...	...	...	1	88.00	...	...
1932	...	...	1	1.20	3	60.00	...	...
1933	...	...	1	1.20	7	456.00	2	1.50
1934	2	42.50	5	4.40	24	404.83	2	2.00
1935	4	13.40	9	8.33	40	1,540.90	5	5.50
1936	14	50.85	12	10.58	49	1,050.75	7	5.45
1937	22	125.00	59	52.03	103	2,507.95	87	95.57
1938	18	183.00	49	38.22	117	4,477.28	75	67.52
1939	28	219.50	77	58.60	109	6,360.25	73	56.50
1940	16	76.50	56	43.25	99	1,798.14	63	43.77
1941	9	60.50	73	46.25	112	1,387.70	52	31.97
1942	...	...	6	3.00	2	6.00	...	...
1943	...	...	...	...	...	...	...	...
1944	...	...	...	...	...	...	...	...
1945	...	...	...	...	...	...	...	...
1946	35	206.00	566	424.50	129	6,625.00	*	*
1947	72	420.00	1,689	1,266.75	233	9,520.50	*	*
1948	119	693.00	3,578	2,683.50	286	11,879.75	*	*
1949	168	976.00	3,684	2,763.00	334	12,668.00	*	*
1950	583	2,914.00	7,269	5,244.00	421	9,430.00	*	*
1951	606	3,075.00	11,984	8,743.00	536	13,312.00	*	*
1952	672	3,330.00	21,237	16,293.00	696	14,994.00	*	*
1953	921	4,482.00	30,125	25,086.50	781	15,377.50	*	*
Total	3,289	16,867.05	80,480	62,771.31	4,095	116,040.55	366	309.78

\*Beginning in 1946 total room cooler sales combined under "Residential."

Total number of central installations—7,384.

Total tonnage of central installations—132,907.6.

Total number of room coolers—80,846.

Total tonnage of room coolers—63,081.09.

Total number of room coolers (postwar only)—80,132.

Total tonnage of room coolers (postwar only)—62,504.25.

Total tonnage exclusive of prewar room coolers—195,411.85.

## Air Conditioning Installations In the Territory of Central Power & Light Co. Corpus Christi, Texas

Room Air Conditioners	
1948	1,107
1949	834
1950	1,962
1951	2,140
1952	2,951
1953	5,278
Total sales prior to 1948...	1,210

Central Type Units For Residential Use	
1948	50
1949	75
1950	100
1951	240
1952	160
1953	298
Total sales prior to 1948...	125
Commercial units sold 1953...	368

## Install Air Conditioning To Improve County Services

BUSHNELL, Fla.—County government offices in the courthouse here now are all equipped with air conditioning units. Installation was complete Aug. 11. Seven one-ton units were installed by Jack Drawdy, of Webster, Fla.

Units are installed in the offices of county judge, tax assessor, collector, sheriff, prosecuting attorney, and two units in the clerk of circuit court's office.

## Coolers Use 12 to 15% of Power

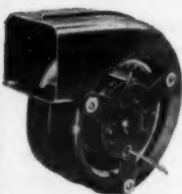
ST. LOUIS—Air conditioners now use 12 to 15% of the electric power consumed in this area, the Union Electric Co. declared recently.

Your appliances stay



...when they have dependable

# Redmond MOTORS

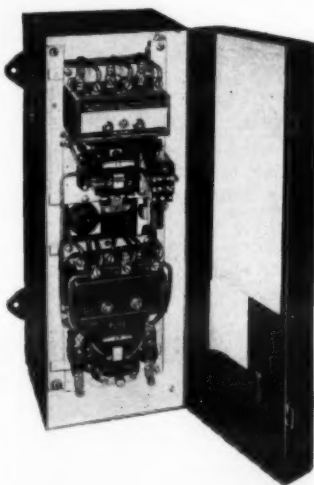


There's no doubt about it. It takes quality and performance to keep a product sold. And dealers and distributors have learned through experience that appliances equipped with Redmond motors stay sold. That's because the long-life and trouble-free operation of these motors assures customer satisfaction, a most important factor in keeping the product... and the customer sold.

Redmond-equipped appliances offer customers the important benefits of 25 years of progressive electrical engineering and precision manufacturing in which 50,000,000 Redmond motors have been produced, setting a pattern of public acceptance based on dependable performance. Result: greater customer confidence, and a minimum of service calls. So, to assure customer satisfaction... look to Redmond, and keep customers looking your way.



Western Area Office: 1260 So. Boyle Ave., Los Angeles, Calif.



## VELVET SMOOTH COMPRESSOR STARTER

No Jolts to Belts or Machines—No Heavy Current Inrush

When you have a big compressor installation... or any job involving the starting of a heavy flywheel load... specify an Allen-Bradley Bulletin 740 (Automatic) compression resistance starter. This starter will accelerate the motor from standstill to full speed with velvet smoothness. It is easy on belts, chains, and gears, because machines are started without a jerk. Send for Allen-Bradley Bulletin 740, today.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.

ALLEN-BRADLEY MOTOR CONTROLS for Air Conditioning and Refrigeration • Manual and automatic across-the-line starters • Compression type velvet smooth starters • Pressure and temperature switches and controls • Relays and contactors from 1 to 12 poles • Push buttons and selector switches.





## Current Literature

To obtain further information on the literature listed below, please refer to key number preceding listing. Please use the "Information Center" form on "What's New" page.

### AGA Chart Shows Special 1954 Gas Range Features

—KEY NO. P-410—

NEW YORK CITY—The American Gas Association released recently the 1954 edition of its "Special Features of Current Gas Ranges," a compact chart of recent gas range developments currently being produced by 43 manufacturers.

The handy chart groups the ranges' special features in eight categories: type, size, color other than white, top section, broiler section, oven section, recessed range sections (new this year), and additional features.

A simple code indicates at a glance the special features pertaining to each brand name. Names and addresses of manufacturers are listed for convenience in inquiring about information not contained in the chart.

Copies of the chart can be obtained from the American Gas Association at the following prices: 10 cents for 1 to 9 copies, 8 cents for 10 to 99 copies, or 6 cents for 100 or more copies.

### Jamison Issues Catalog On Super Freezer Doors

—KEY NO. P-411—

HAGERSTOWN, Md. — Super Freezer doors for use to -50° F. are described in a new catalog issued by the Jamison Cold Storage Door Co.

Construction and design details are given along with a check list for picking the right kind of door for the application. Included are complete specifications for various standard doors. Optional features with advantages are also featured.

Size tables and dimension details are listed for both the walk-in, reach-in type of door and the vestibule type of door. Sketches, photographs, illustrations, and prints to scale supplement the product presentation.

Three full pages show various types of Jamison Super Freezer doors in a broad range of uses. Ten special duty doors are pictured in the back of the catalog.

### Bulletin Gives Data on Alnor Thermocouples

—KEY NO. P-412—

CHICAGO — The new Illinois Testing Laboratories Bulletin No. 4181 entitled "Alnor Pyrometer Accessories" is available in limited quantities to those concerned with the installation, use, and maintenance of pyrometer systems.

Specifications and performance data for Alnor thermocouples of every type and application are covered. Also included in the bulletin are notes on thermocouple alloys, temperature-millivolt relationship curves, a list of industrial applications, a temperature conversion table, and other valuable information.

### Pocket Chart Converts Fahrenheit to Centigrade

—KEY NO. P-413—

RICHMOND HILL, N. Y. — A pocket size chart of Fahrenheit and Centigrade temperature equivalents has been announced by the Moeller Instrument Co. here.

The reverse side of the chart illustrates by means of an animated demonstration, the easy reading qualities of Moeller thermometers made with Moeller glass red reading column.

The chart is 8½ in. by 3½ in. in size. It can be carried in the pocket or wallet or may be placed under glass desk tops for reference.

### Nor-Lake Issues Catalog On Dry Bottle Cooler

—KEY NO. P-414—

HUDSON, Wis. — Rapid heat removal through a continuous flow of dry frigid air is a feature of the "Low-Boy" dry bottle cooler described in a two-page catalog sheet issued by Nor-Lake, Inc. here.

Photos of the remote and self-contained models, advantages, product specifications, and cross-sectional diagrams of the beverage coolers are included in the two-color literature.

Built of heavy-gauge steel, the units have a capacity of 13 to 30 cases, while adjustable bins and disappearing doors assure easy access to the storage area, according to the manufacturer. Coolers are also available in stainless steel.

### How To Select a Motorpump Told In Slidefilm Booklet

—KEY NO. P-415—

NEW YORK CITY — A slide film presentation in printed form dealing with the selection of the proper motorpump for any specific job has been published by Ingersoll-Rand Co.

The original slide film was produced for the benefit of Ingersoll-Rand's Motorpump distributors and sales outlets. But it was found so helpful that it has now been prepared in booklet form as a handy reference guide.

The booklet gives a brief description of what a centrifugal pump is and how it works. Then it points out the various factors, such as the quantity, pressure, friction losses, and head that must be considered in selecting a pump to meet a specific installation.

The next step is the presentation of a typical problem and its solution, by means of material shown on previous pages, such as charts and curves of various forms.

Finally, the "film-in-a-booklet" states the material recommended for various pumping installation and gives actual installation views.

### American Silver Describes New Thermostat Metal Strip

—KEY NO. P-416—

FLUSHING, N. Y. — A new six-page bulletin describes American Silver Co.'s new ASC-1 thermostat metal strip as well as fabricated bimetal elements . . . for use in the electrical, heating, appliance, instrument, and control fields.

Tables, charts, and formulas are included to assist the user in the design of thermostat metal elements.

Incorporated within this bulletin is a separate thermostat metal specification sheet to be used as a reference for establishing purchasing, inspection, and quality control procedures.

Included here are dimensional and chemical analysis ranges and tolerances. Mechanical, thermal, and electrical properties with corresponding tolerances are also listed.

### Bulletin Describes Latest 'Venturafin' Unit Heaters

—KEY NO. P-417—

DETROIT — Bulletin 7517, covering the latest design of American Blower "Venturafin" unit heaters for steam or hot water applications has been issued recently by the American Blower Corp. here.

It covers features of design, general engineering data, capacity tables, and piping diagrams.

### Tempcon Issues Catalog On Equipment, Supplies

—KEY NO. P-418—

MINNEAPOLIS — Tempcon, Inc., wholesaler here, has issued a new catalog covering its line of refrigeration, air conditioning, and heating equipment and supplies.

The 112-page catalog, compiled by William Schaller Co., Inc., Hartford, Conn., is standard 8½ by 11-in. size, contains illustrations and all specifications necessary for ordering by mail, and is cross-indexed for ready reference.

### Folder Tells Need for Winter Humidification

—KEY NO. P-419—

CLEVELAND — The Humidifier Association announces the forthcoming publication of a folder designed to bring the story of the need for winter humidification to the consumer.

Entitled "How Proper Humidity Protects Your Health and Increases Your Comfort," the two-color folder explains the need for humidification, the effects of too little humidity, and how to obtain proper humidity levels with humidifiers. It is designed so that it can be used as a mailing piece.

Copies will soon be available in quantity to dealers or contractors who are interested in promoting humidifier sales.

Advance sample copies are available now with no obligation from The Humidifier Association.

### 'Humidity Engineer' Tells Needs of Film Industry

—KEY NO. P-4110—

TOLEDO — A new issue of *The Humidity Engineer*, devoted to industrial humidity conditioning problems, has just been released by the Kathabar Div. of Surface Combustion Corp.

One article describes the air conditioning and mechanical system installed in the Southwestern Home Office of the Prudential Insurance Co. of America, Houston, Texas.

A second article discusses the air conditioning needs of the photographic film industry. Typical installations for solvent evaporation, emulsion chilling, and raw film strip drying are described.

This issue also describes the latest applications of humidity conditioning. One is the drying of caves and mines, so they can be used for underground storage areas. Another is the conditioning of pilot plant operations for the making of germanium transistors.

The third discloses the availability of facilities to test glue and gelatin. The object is to develop a time-temperature cycle for low temperature drying, peculiar to individual products and processes.

A new 18-page brochure on "Humidity Conditioning" is also offered. It contains case histories, a section on humidity problems and their solution.

**Small shelf — Big stock...**

**WITH LEHIGH'S GREATER INTERCHANGEABLE PARTS**



Or, to put it another way, a \$25 investment allows a Lehigh BLUE-COLD wholesaler to carry Seals, Valve Plates and Gaskets for the entire BLUE-COLD line from 1/4 H.P. thru 5 H.P. You must agree that this is not only a reflection of good engineering but a many sided advantage. Investment is smaller. Inventory is smaller. Less space is required. Turnover is more rapid (and percentage of profit!) Unit servicing is much easier and convenient.

**Everybody wins!**

**THREE BASIC COMPRESSORS MAKE OVER 200 MODELS**

with capacities from 870 to 70,000 BTU/Hr. with over 50 generally interchangeable parts

A postcard will bring latest PARTS CATALOG or see your nearest Lehigh BLUE-COLD wholesaler.



**Lehigh BLUE-COLD**  
COMMERCIAL REFRIGERATION



**Lehigh BLUE-COLD**  
CONDENSING UNITS and SYSTEMS

WM-10F-1 H.P. Water Cooled Unit

Lehigh Manufacturing Co., Lancaster, Pa.  
Division of Lehigh Foundries, Inc.

Export Dept. — 13 E. 40th St., New York 16, N. Y.

Manufacturers of Malleable and Grey Iron Castings • Refrigerating Equipment • Air Valves • Automatic Vending Machines

## DISTRIBUTORS AND DEALERS ONLY

Major manufacturer of commercial refrigeration products disposing of overstocked inventory of current models.

Prices well below factory costs.

MEAT CASES — OPEN & CLOSED  
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PRODUCE CASES — OPEN & CLOSED  
REACH-IN REFRIGERATORS  
WALK-IN COOLERS

For specifications and prices, write to Box 4469,  
Air Conditioning & Refrigeration News.



## What's New

When requesting further information on new products, please use "Information Center" form.

### 'Freon-22' Now Available In 'Charge-A-Cans'



KEY NO. D-840

LOS ANGELES — Introduction to the refrigeration industry of "Freon-22" in disposable "Charge-A-Cans" has been made by the Aerosol & Refrigeration (Eston Chemicals) Div. of American Potash & Chemical Corp.

This marks the first time in the refrigerant and chemical indus-

tries that "Freon-22" has been packaged in the disposable containers, which are similar to aerosol containers available for home use, the company said.

Distribution of the new packaging for the refrigerant brings to four the number of such products available in Charge-A-Cans, inasmuch as "Freon-12," "Freon-114," and sulfur dioxide already are on the market.

Main advantages of Charge-A-Can packaging, according to American Potash & Chemical, are savings in labor, material, and time in servicing refrigeration units. In addition, no deposit is required on the disposable container, and the new type packaging results in controlled purity and accurate measurement, it was pointed out.

"Freon-22" is being packaged in a 2-lb. container, whereas other American Potash & Chemical refrigerants are marketed in 1-lb. Charge-A-Cans.

The reason for this is that the usual charge of "Freon-22" is approximately 2 lbs.

### 2-In-1 Capacitors Offered By G-E for Conditioners

KEY NO. D-841

HUDSON FALLS, N. Y. — Newly-designed capacitors for air conditioners, that can individually provide the power factor correction of two single capacitors of the same voltage ratings, have been announced by General Electric Co.'s Capacitor Dept. here.

The two-in-one units are generally less costly, occupy less space, weigh less, and require less handling, G-E engineers pointed out.

They can be applied wherever electrical circuits in air conditioners are designed for two running capacitors and a method of switching.

Enclosed in solderless, drawn-oval, steel cases (some large sizes are in rectangular cases), the units are composed internally of low-loss Kraft paper and dead-soft annealed aluminum foil impregnated with "Pyranol" dielectric.

Two types of bushing terminals are available on the dual-section capacitors: fork terminals and quick-connect (solderless) terminals. Each unit has three bushings, one of which is common to both sections.

### Thermostat Anticipates Home Heating Needs

KEY NO. D-842

WESTERN SPRINGS, Ill. — A new type of "thermostat" that anticipates temperature changes both outdoors and indoors to maintain exactly the warmth level needed for comfort in any weather was announced recently by Automatic Devices Co., Inc. here.

The new heating regulator, called the 3 Way "Weather - Flo," uses a temperature "sensing" system consisting of a 46-ft. length of copper tubing and a flexible metal bellows filled with liquid under pressure. Expansion and contraction of the liquid causes the bellows to turn the furnace burner switch on or off according to anticipated heating requirements.

The tubing functions as a "stretched out" thermostat to measure the slightest temperature change at three places: Outdoors, indoors, and in the warm air supply duct or hot water pipe.

Indoor temperature is raised slightly as outdoor temperatures drop (an increase of one degree

for every 20 degrees drop outside). This higher indoor warmth level in colder weather offsets the additional heat lost by the body to colder exterior walls.

A constant, uninterrupted flow of warmth is provided — just enough to offset heat losses from the home. This ends an effect called "cold seventy" which commonly occurs with the ordinary room thermostat and stops draftiness and the discomfort of "hot-cold, hot-cold" heating.

The volume of warmth flowing from the heating system never changes. It is simply the temperature of the air or water circulated that changes as the load varies.

Since the 3 Way Weather-Flo limits high system temperatures to only the coldest winter days, and eliminates long periods of burner operation that create excessively high stack temperatures, the dangers of overheating and chimney fires are reduced.

By eliminating the need for "temperature pickup" common to "start-stop" thermostat controls, the new unit actually stretches heating capacity. It adds still more capacity by raising the maximum temperature at which it is practical to operate the heating system, since the only time the 3 Way Weather-Flo allows this maximum temperature to be approached is during extreme sub-zero weather.

### Accessories Installed with 'T-S' Connection

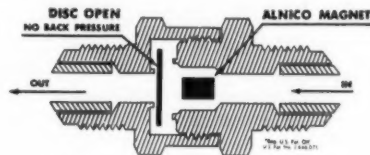


Check Valve with "T-S" Connection.

KEY NO. D-843

LONG ISLAND CITY, N. Y. — A "T-S" connection, designed to permit installation of valves, driers, strainers, and all other accessories normally installed with a flare or a solder connection has been introduced by the Wagner Tool & Supply Corp. here.

To make an installation with a flare connection, the company explained, leave the insert in place and use as a standard male flare connection. To make a sweat or solder connection, remove the in-



Working Parts of Check Valve.

sert and use as a standard solder connection.

Thus, the company declared, the T-S connection provides the right accessory with half the inventory, and installation is made without the use of any new or additional tools.

The new T-S connection has been incorporated in Watsco's "Magni-Chek" valve and, in the near future, will become available with Watsco's shut-off valves and other refrigeration accessories.

### Mills Introduces New Selective Bottle Vendor

KEY NO. D-844

CHICAGO — A new three-flavor selective vendor capable of vending 6, 8, and 10-oz. bottles is now available to all bottlers, it was announced recently by Mills Industries, Inc.

The new vendor is fully automatic in operation and has a capacity of 123 bottles — 61 of the parent flavor and 31 each of two other flavors. The "entirely new and differ-

ent" vending mechanism "eliminates literally dozens of intricate parts and all complicated timing adjustments," the company said.

"The mechanism is so simple that to change from one bottle size to another requires only about 15 minutes and can be accomplished on the location. A simple skate key adjustment changes each column to compensate for diameters and lengths of various bottles."

A new Bulletin 3F-54 gives details and specifications.



"My Typhoon District Manager is always Johnny-on-the-spot," says Don Kissell (left), Typhoon Los Angeles dealer.

**TO GET ON THE MOST PROFITABLE FACTORY-DEALER TEAM IN THE BUSINESS, TIE UP WITH**

**TYPHOON**  
AIR CONDITIONING

794 Union Street,  
Brooklyn 15, N. Y.

• COMMERCIAL AIR CONDITIONERS, 2 TO 25 TONS  
• RESIDENTIAL YEAR-ROUND UNITS FOR GAS OR OIL  
• ROOM AIR CONDITIONERS, 1/2, 1, 1 1/2, 2, 3 H.P.  
• PACKAGED HEAT PUMPS, RESIDENTIAL & COMMERCIAL



Stop service calls . . . keep out rust and sludge . . . open new doors to sales acceptance! — with coolers, ice-makers, sell "Taste-Master"! — checks chlorine, traps sediment; promotes service-free satisfaction with all water processing appliances. Write—

**Filtrine MANUFACTURING CO.**  
BROOKLYN 38 • N. Y.  
"Water Coolers and Filters for 40 Years"

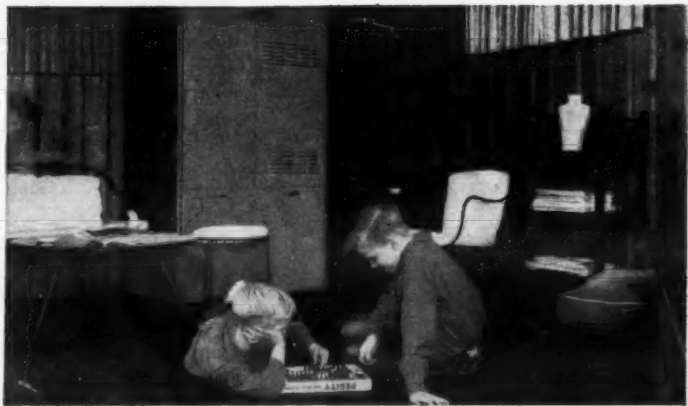


**IT'S NEWS!** Production of Worthington window air conditioners is way up this year. People everywhere agree with one of the country's top interior designers that it's "the best-looking window air conditioner". And customers like the easy way they dial the cool weather they want. Units in 3/4 and 1 hp sizes.



**IT'S NEWS!** Three-dimensional circulation, whisper-quietness, carefree performance — three big selling features of the handsome 1954 Worthington packaged air conditioner. Sizes from 3 to 15 hp, units for remote installation up to 25 hp. Read all about it in our new Bulletin C-1100-B49.

## Worthington makes more air conditioning news in '54



**IT'S NEWS!** Here's the smoothest running, most compact year-round residential air conditioner on the market. Home-owners get heating, cooling, air circulation, air filtering and dehumidification or humidification — all in one package. Gas- or oil-fired heating, 2 and 3 hp ratings. Write for more information to Worthington Corporation, Air Conditioning and Refrigeration Division, Harrison, New Jersey.

**WORTHINGTON**

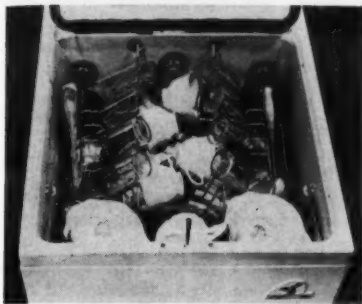


THE BEST FRANCHISE . . . THE MOST COMPLETE LINE



## What's New (Con't)

### Monitor Bows Portable Electric Dishwasher



KEY NO. D-845

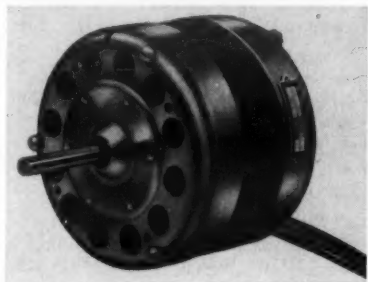
NEW YORK CITY—A portable electric dishwasher that hooks up to the sink faucet and drains through the sink has been introduced by Monitor Equipment Corp. here.

The unit uses any soap or detergent and has a capacity for a table setting for eight—58 pieces and silverware. It consumes 10½ gals. of water, 3½ on the washing cycle and 3½ each on the two rinsing cycles. The washing cycle is five minutes long and the two rinsing cycles three minutes each. The dishwasher stands 34½ in. high, is 24 in. deep, and 21 in. wide. Shipping weight is approximately 105 lbs. It operates on 110 volt, 60-cycle, a.c.

A universal adapter fits any sink faucet, the company says. It claims that the washer filters out all soils and leaves no spots, streaks, or lime deposits.

Retail prices varies between \$219.95 and \$229.95.

### 6-Pole Shaded Pole Motor Bowed by Loyd Scruggs



KEY NO. D-846

FESTUS, Mo.—A new Type 600 6-pole shaded pole motor with a rated load speed of 1,000 to 1,050 r.p.m. in either 115 or 230-volt, 60-cycle a.c., has been introduced by the Loyd Scruggs Co. here.

The motor can be furnished with 115 or 230-volt winding, while internal windings can be provided for two and three-speed operation. Rotation is clockwise or counter clockwise as specified. The motor is available with ¾ or ½-in. diam-

eter shaft and single or double extension.

Fully annealed "motor grade" lamination steel is used. Heavy gauge drawn steel end bells are machined to provide accurate and permanent rotor alignment, the company said.

The rotor features a "copper weld" type conductor and end ring design, and a protective resin coating. Shaft and rotor assembly are dynamically balanced.

The wound field is impregnated with high quality insulating varnish for Dielectric and moisture protection. Bearings are of the sintered bronze, self-aligning type. An extra large oil reservoir with felt packing is provided. Bearing and shaft are individually air-gapped.

No load speed is approximately 1,180 r.p.m. Power range for continuous fan duty is ⅛ to ¼ hp. and for continuous mechanical duty, ⅓ to ½ hp.

### Square Box-Type Blower Fits Into Ducts



KEY NO. D-847

CLEVELAND—Viking Air Conditioning Div. of The National Radiator Co. here recently introduced the new Viking "Universal Duct Blower," a square box-type unit that fits right into the ductwork of a residence or commercial building.

The unit is available in two overall sizes—25 in. by 22½ in. by 29½ in. and 27 in. by 27 in. by 33½ in.—and in six capacities ranging from 600 to 3,400 c.f.m.

The Viking Universal duct blower can be mounted in any standard discharge position; to blow up or down, left or right, in a top horizontal or bottom horizontal position.

The secret of this "any-position" mounting is the cushion suspension of the complete blower assembly, including its motor, on its center of gravity, Viking says.

The whole unit can be revolved

to any discharge position and, since the blower assembly is center-of-gravity mounted, there is no need to change the motor adjustment, pulley alignment, or belt tension, the company explained.

The blower assembly actually "floats" on resilient rubber shock mounts within the Universal duct blower. The assembly is isolated from the cabinet further by a felt seal around the edge of the outlet. The rubber mounts and felt seal prevent metal-to-metal contact and absorb noise-making vibrations.

The new Viking Universal Duct Blower has numerous applications for heating, cooling, and ventilating. Because of its compact size, its "any-position" mounting, and the fact that it need not be directly connected to the furnace or heating unit to give peak performance, the Universal duct blower can solve many design and installation problems for heating and cooling dealers and contractors, the manufacturer claims.

It is particularly useful in "remote" cooling systems, where the evaporator coil is in the duct and the condensing unit is at some other location. It can be attached directly to self-contained and sealed-type refrigeration units with cooling capacities up to 10 tons. Its compact size and extreme flexibility in installation aid in designing "tucked away" cooling systems for smaller homes.



### Traveling Coffee Kit Has All But the Electricity

KEY NO. D-848

NEW YORK CITY—A traveling coffee kit called "Per-Kit" is being promoted by Jann & Co. here as a housewares gift leader at \$4.97 each, the company announced.

The Per-Kit is 9 in. high, 6¾ in. wide, and 4½ in. deep. It is covered with brown simulated alligator plastic with three-sided top zipper and plastic handle.

Included in the kit are a 1 to 2-cup electric aluminum percolator with cord, two plastic cups and saucers, two plastic teaspoons, two tea bags, three packets of instant coffee, and two packets of "Preem," a powdered cream.

# WHAT CAUSES OIL DECOMPOSITION?

A lot of people will tell you that high discharge temperatures cause oil decomposition. This is certainly true. And it's a problem you can often handle easily by proper maintenance and adjustment of equipment. But this is not always enough. If the oil you're using doesn't have *high stability*, it can still decompose no matter what the discharge temperature may be. The solution to this is easy. Use an oil with proved high stability—SUNISO.

**Sold Everywhere by  
Leading Refrigeration Wholesalers**

**SUNISO ADVANTAGES** • provides adequate lubrication at all temperatures encountered in service • possesses a high degree of stability • won't throw out wax deposits under low temperature conditions • has extremely low moisture content • resists formation of corrosive acids and carbon under service conditions • separates readily from refrigerant—won't react adversely

**SUNISO**  
**REFRIGERATION OIL**  
**A PRODUCT OF SUN OIL COMPANY**

## Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....

### Products Advertised

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## Refrigeration Problems and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

### School Refrigeration Systems—On or Off?

#### Question:

"The lady who is in charge of the cafeterias in the various grade and high schools of this city has asked us for our opinion on a subject on which she has apparently received conflicting advice from several others whom she has consulted.

"She is inclined to feel, perhaps with some justification, that the advice that she has received has been influenced by sales considerations. Since we do not sell the commercial type of equipment under discussion, we are interested only in giving her the best advice possible, uninfluenced by any commercial considerations. We would appreciate you, as an impartial and disinterested party, giving us your opinion which we will pass on to her. In addition to our own thanks we know that she too will appreciate your advice on this matter.

"The question is simple: Shall the commercial type refrigerators in the cafeterias be turned off at the end of the school year or should they be left on and permitted to operate through the three-month summer vacation? If they are to be turned off during the vacation months, should they be 'pumped down'?"

"Several of the refrigerators are located in storage rooms and therefore would not be as readily noticed as if they were out in the cafeteria kitchens. Each school has a janitor who remains on duty throughout the summer but it is unlikely that he would contribute much toward maintenance and might not, in fact, notice any improper operation of the equipment."

#### Answer:

The conflicting advice that the supervisor of cafeterias has received may well have differed by reason of the differences in design and construction of the different makes; and that each of her advisers may have been quite sincere and may have given the proper advice for the particular make and type of equipment which they may have sold.

What may be the proper procedure for one make and type of equipment could well be inadvisable for another make and/or model of equipment that in general appears to be quite similar but which may require dissimilar service treatment.

Assuming that we are referring to refrigerators carrying temperatures of from about 40° to 50°, the principal difference in design having the most effective bearing on this question would probably be in the type of condensing units with which the refrigerator is equipped, or, more specifically, whether the condensing unit uses a hermetic motor-compressor or an open-type belt-driven compressor.

#### COMMERCIAL SYSTEMS NOT SEALED TYPE

Refrigerators that are classed as "commercial" do not follow the same type of design as the smaller "household" sizes. It is not merely a matter of size; the commercial refrigerator is not merely a large edition of the household refrigerator.

The commercial refrigerator does not have a fully hermetic refrigerating unit consisting of motor-compressor, condenser, evaporator, capillary tube, and refrigerant lines, with brazed or soldered connections as does the household unit.

Connections of lines to the component parts of the commercial unit are more apt to be made with flared tube fittings. The refrigerant

control of the commercial unit is more likely to be a thermostatic expansion valve rather than a capillary tube, although the latter is quite common in commercial units, especially those equipped with a hermetic condensing unit.

Consequently, there is a greater possibility of leaks developing in the commercial than in the household refrigerator. This has a bearing on the question of whether or not the commercial refrigerators are to be turned off or permitted to run during the three months summer vacation.

On this consideration alone we might conclude that the commercial unit, whether equipped with a hermetic motor-compressor or an open-type compressor, should be pumped down and taken out of service during extended periods of disuse, particularly during the warm summer months when pressures would be relatively high.

It is true that if the commercial system is turned off for the summer it is probably advisable to pump it down before turning it off. On the other hand, the likelihood of a leak that would lose a charge of refrigerant may not be great enough, for this reason alone, to warrant the cost of the spring pump-down and the fall start-up.

#### SIZE IS A FACTOR

The size of the refrigerator and its refrigerating system and the amount of refrigerant charge could change this. If the system were large, and the amount of refrigerant that might be lost were great enough, it might be profitable insurance to have the system pumped down in the spring and started up in the fall.

The large air conditioning system is a good example of this. Rather than take a chance on losing a charge of refrigerant worth several hundred dollars, it certainly pays to pump the refrigerant charge into the receiver in the spring and then start the system up again in the fall.

With the commercial refrigerator, the amount of refrigerant charge is not as great as in a large or even moderate sized air conditioning system, so the inducement to pump down the charge is not as great; nor is the cost of the pump-down as great. A commercial system, with a refrigerant charge of as much as 20 or 25 lbs., could justify a charge for an hour or so labor to pump it down into the receiver.

The savings in electricity for the summer could very well pay for the cost of the spring pump-down and fall start-up of a large refrigerator such as a large walk-in cooler.

#### OPEN TYPE SHOULD BE PUMPED DOWN

If the commercial refrigerator is equipped with an open-type compressor, that is, one having a shaft seal, it is quite likely that the system should be pumped down for an extended summer shut-down. If the system is not pumped down, but merely shut off, the crankcase pressure during shut-down, with "Freon-12" as the refrigerant, may get up to 117 p.s.i.g. if the room temperature is 100°. If the refrigerant

is "Freon-22" the crankcase pressure would be 198 p.s.i.g. at 100°.

It takes a good seal to stand these crankcase pressures without "blowing." It depends a great deal on the design of the seal. If the seal is the "balanced" type, it should not open up on high crankcase pressure, for in a truly balanced seal the unseating effect of crankcase pressure is exactly "balanced" by the seating effect of crankcase pressure.

Therefore, the pressure of the seal nose on the seal ring is the same, regardless of whether the crankcase pressure is high or low. Nevertheless, there is more likelihood of some slight leakage of refrigerant between the seal nose and the seal ring if the crankcase pressure is quite high, such as would be the case if the system was shut down for an extended summer period and not pumped down.

#### SUMMARY

To summarize: it can be said that regardless of type it is rather hazardous to allow a commercial refrigerator to operate unattended throughout the summer. On the other hand, if the commercial refrigerator is equipped with a hermetic motor-compressor, it could possibly be shut down for the summer without pump-down; but if it is equipped with an open-type compressor having a crankshaft seal it would probably be advisable to pump the system down before shutting the refrigerator down for the summer.

This should not be taken as a hard and fast rule, for the decision would be influenced by the size of the refrigerator, the refrigerant used, the electric rate, and the labor cost of the spring pump-down and fall start-up.

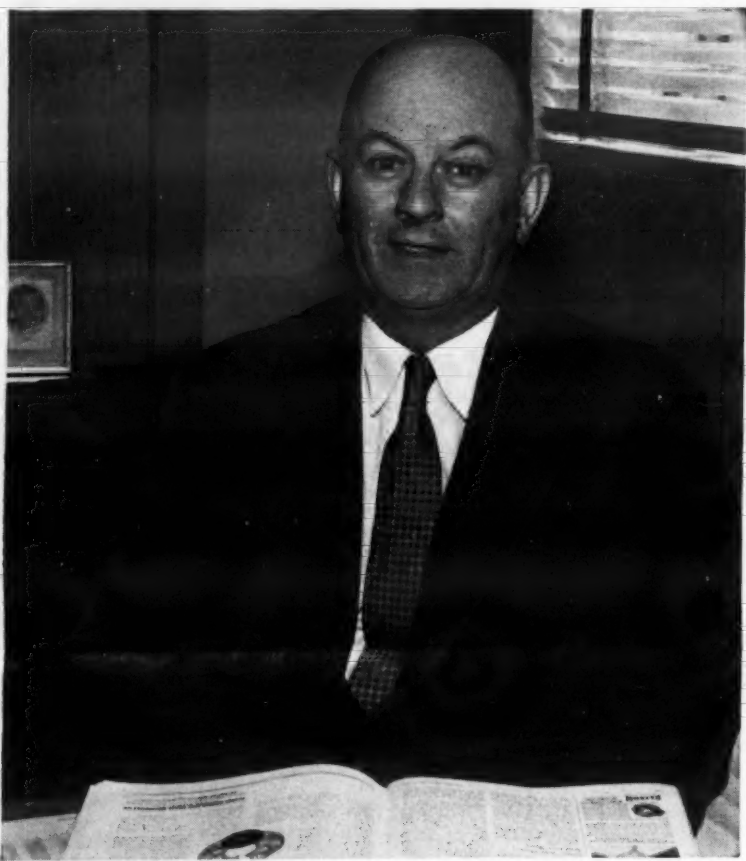
If the decision is to shut the refrigerator down for the summer, the fuses should be removed and kept in a separate place so that the refrigerator cannot be turned on accidentally. Also, all food should be removed, the refrigerator washed out, and the doors left open.

And lastly, it should be positively determined that the refrigerator will not at any time during the summer be accessible to young children who may, in play, lock themselves inside. Otherwise it becomes a "Death Trap," the same as an abandoned refrigerator.

### 16 States Now Have Laws on 'Death Traps'

NEW YORK CITY — Sixteen states have now passed laws prohibiting the abandonment or storage of refrigerators or freezers in such a way as to be hazardous to children, the National Electrical Manufacturers Association announced recently. Most of the laws require that the door or latch be removed.

The states with such laws are: Arizona, California, Florida, Georgia, Illinois, Kentucky, Louisiana, Massachusetts, Michigan, Nevada, New Jersey, New York, Pennsylvania, South Carolina, Texas, and Virginia.



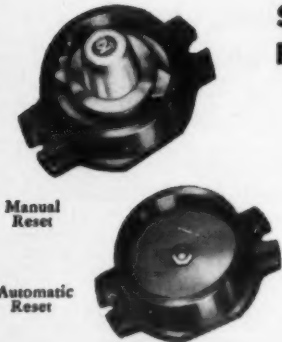
### KLIXON Motor Protectors Save Many Headaches Says Large New Jersey Motor Rebuilder

TRENTON, NEW JERSEY: George R. Lockwood, President of Lockwood's Electric Motor Service, Inc., one of the largest and best equipped motor shops in the Trenton area, and representatives of several large motor manufacturers, recommends KLIXON Protectors for motors. He says:

"We find Klixon Protectors save us a lot of headaches on come-backs and enable us to give our customers guaranteed service on motor repairs. We recommend Klixon Protectors highly."

#### Klixon Protectors Reduce Service Calls and Repairs by Preventing Motor Burnouts

The KLIXON Protectors, illustrated, are built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.



**KLIXON**

METALS & CONTROLS CORPORATION  
SPENCER THERMOSTAT DIVISION  
2408 FOREST STREET, ATTLEBORO, MASS.



### RANCO DUAL PRESSURE CONTROL

... safety-guarantee for your air conditioning service

Your customers will appreciate the protection of this  
Dual Pressure Control ... and here's why:

High pressure cut-out with non-adjustable high pressure limit stop safeguards the system—prevents service adjustment above the maximum safe operating pressure. Low pressure safety cut-out prevents pulling air into the system with excessive low pressure operation.

In either event, the system shuts down until restarted with the manual reset. Both high and low pressure ranges are independently adjustable.

Add up those features and you'll understand why Underwriters Laboratories requires this type of control on all hermetically sealed air conditioning systems ... why both you and your customers will consider it well worth the few minutes it takes to install. Make your next job a Ranco Dual Pressure Control installation ... now available in Types 012-1593, 012-1594 and 012-1595 ... a safety-guarantee for your air conditioning customers.

**Ranco Inc.**  
COLUMBUS 1, OHIO



WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS



DENIMS OR DAINTY DRESSES are washed and dried in Kelvinator's new deluxe home laundry appliances. Automatic washer (L) has two separate cycles, both completely automatic, with a full-time, full-tub wash for regular loads of laundry, and a short-fill, short-interval cycle designed for synthetics. Matching electric dryer (R) operates with high air velocity and low heat temperature that is said to be safe for even the finest fabrics.



## Kelvinator Washer--

(Concluded from Page 1, Col. 2)

"The fine fabrics cycle incorporates variations from the regular cycle every step of the way, that were specifically designed for proper laundering of fine synthetics.

"The fine fabrics setting on the control dial not only shortens the operating time, but without further adjustment it also provides a shorter fill of water, briefer agitation, shorter and gentler rinsing, and reduced spin-period.

Washing cycles are controlled by a single "all-fabric dial." Separate temperature control permits selection of hot or warm water for either cycle.

The matching dryer, model DE-2, features low safe heat and high air velocity for safe drying of even the most delicate fabrics, a control dial graduated up to 120 minutes, and a bell signal that tells when the dryer has completed its cycle.

Travis said the new washer has a shorter washing time even for regular loads. On the regular fabrics cycle, total time consumed is less than 34 minutes, including 12 minutes washing time. Total water used is about 30 gals.

Control dials are mounted on

top of the new washer at the rear, water-control on the left and all-fabric operating dial at the right. The water control dial automatically provides hot or warm wash water for either the regular or fine fabric cycle by simply turning the dial to the hot or warm position. Warm rinsing water is automatically delivered in either case.

A new signal feature is the set of "Tel-a-Fabric" lights on the control panel of the AW-2. They are colored panels of red plastic, lettered to tell clearly which cycle is operating. They light up during operation and cut off when the cycle is completed.

The new washer has a capacity of nine lbs. of dry clothes; its tub uses 12 gals. of water when filled. For regular loads, washing begins with concentrated lather in half a tub of water, providing an exclusive "shampoo" washing action that loosens dirt and grime.

Overflow rinsing fills the tub with clean fresh water that floats dirt and soap scum up and away from the clothes and over the top of the tub. After overflow rinsing, the agitator splashes away any remaining soil with a deep power rinse.

The washer is loaded from the top, and is equipped with a watertight glass window in the lid that permits the user at any time to observe the washing action. Any operation in either wash cycle may be skipped or repeated merely by lifting and resetting the all-fabric control dial.

The matching DE-2 dryer also features a high gold-finished back-guard trimmed with chrome, red-and-chrome medallion, fluorescent light, control dial and harmonizing decorative knob in blue and gold.

It offers the three safety features most important in a dryer—safety cylinder, safety door, and safe temperature.

The dryer accomplishes rapid drying by combining high-velocity air flow with uniform moderate temperature that is safe for all types of fabrics.

Clothes may be removed immediately when the drying cycle has ended, since no cooling period is necessary. The lint-trap is at the bottom of the dryer.

## Norge Ranges--

(Concluded from Page 1, Col. 4)

He noted that in about 25% of Norge's potential selling areas, the company's representation has been changed in the past two months.

Sayre came to the meeting from a hospital bed where he had been treated for a separated disc in his spine.

The new range line, consisting of five electric and five gas models, includes the following features preferred by the homemakers:

1. Two ovens to permit baking and broiling at the same time.
2. An adjustable, cross-top lamp which completely lights the working surface of the range.
3. Waist-high broilers.
4. Divided top working surface, and provision for a griddle or a fifth unit.
5. Appliance outlets and clock timers.

6. Easier to clean gas range burners which give off less heat and make for a cooler kitchen.
7. Faster cooking surface units on electric ranges.
8. Modern styling.

The electric range line includes three models with 41 in. width and two with 38 in. width.

The top deluxe 41-in. range features two automatic ovens with a picture window on the master oven. The master oven measures 21 in. wide, 15½ in. high, and 18¾ in. deep. The thrift oven is 14 in.



LARGE 41-IN. WIDE electric range Model No. 413 just introduced by the Norge Div., Borg-Warner Corp., has two ovens and a top griddle. Full-width fluorescent Adjust-a-Lite can be moved down and forward. Controls on backpanel light up with seven colors to indicate seven cooking speeds. Suggested retail price is \$449.95.

wide, 12½ in. high, and 18¾ in. deep.

This model measures 28 in. deep and 53¾ in. high with the Adjust-a-Lite raised. Suggested list price is \$449.95.

The model E-412 also has two ovens, but only the master oven with picture window is automatic. Oven dimensions and width and depth dimensions are the same as in the E-413. Height is 48¾ in.

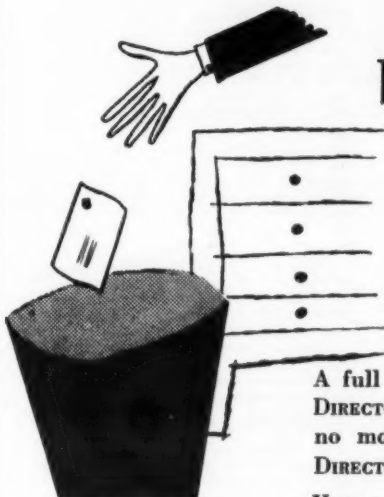
This model has two appliance outlets. A rotary barbecuer is an optional feature. Suggested list price is \$359.95.

The third 41-in. range, the E-

411, has one automatically controlled oven and side and bottom storage. Seven-speed "Ful-Vue" controls, deep fryer, and optional rotary barbecuer are other features. Suggested list is \$249.95.

Model E-382 has an automatically controlled oven measuring 16 in. wide, 15½ in. high, and 20 in. deep. Side and bottom storage and a deep-well cooker are included. Over-all dimensions are 38 in. wide, 27 in. deep, and 47½ in. high. Price is \$219.95.

Model E-381 does not have the automatic oven or bottom storage. Its suggested list price is \$179.95.



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We understand copy deadline is Sept. 15, 1954.

We need more information before placing order ☐

Rates: 1 page, \$300; 2 pages, \$550; ½ page, \$190; ¼ page, \$110; color, \$100.

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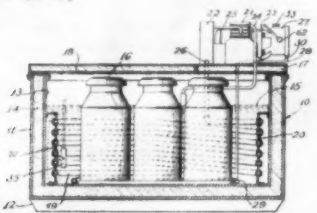
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# PATENTS

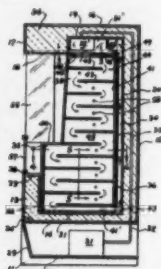
## Week of April 6

**2,674,101. REFRIGERATION CONTROL MEANS.** John Calling, Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application Sept. 8, 1950, Serial No. 183,782. 5 Claims. (Cl. 62-4.)



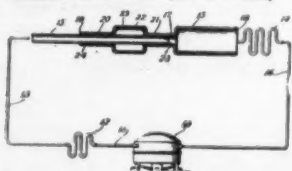
1. In a refrigerator cabinet, the combination of a compressor, an evaporator immersed in a cooling liquid, a pump for forcing air over said evaporator, an electric motor for driving said compressor and pump, an electrical circuit for supplying current to said motor, said electrical circuit provided with a first circuit breaker located in spaced relationship to said evaporator and a second circuit breaker located in said pump, said first circuit breaker operating to break the circuit when an ice bank of a predetermined size has formed on said evaporator, said second circuit breaker operating to close the circuit independently of said circuit breaker when the pump is operating to pump air.

**2,674,103. FROZEN FOOD CABINET.** Frederick J. Kuhn, Detroit, Mich. Application March 3, 1953, Serial No. 340,084. 4 Claims. (Cl. 62-102.)



1. In a frozen food cabinet having an insulated storage space and an air cooling compartment thereabove having a plurality of slotted air outlets, a heat exchanger of a refrigerating unit and a fan in said cooling compartment, a plurality of upright spaced hollow partitions positioned within said storage space, said cabinet having an upright air duct therein communicating with said cooling compartment, each partition having an inlet and an outlet respectively in communication with a cooling compartment outlet and with said duct, whereby refrigerated air is constantly recirculated through said partitions, duct, and cooling compartment, each partition having a plurality of parallel spaced staggered partition elements defining a circuitous air passage through said partitions.

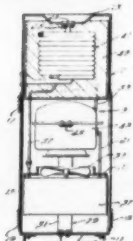
**2,674,105. TUBE JOINT IN REFRIGERATION SYSTEM.** John R. Prosek, Evansville, Ind., assignor to International Harvester Co., a corporation of New Jersey. Application Oct. 7, 1950, Serial No. 188,960. 1 Claim. (Cl. 62-127.)



In a refrigeration system, an evaporator, a metering device, said metering device comprising a length of capillary tubing, means for supplying refrigerant to one end of said capillary tubing and for drawing refrigerant from one end of said evaporator, means interconnecting the other end of said capillary tubing and the other end of said evaporator, said means consisting of two annular reduced portions of said other end of said evaporator, one of said reduced portions positioned at the extremity of said other end of said evaporator and the other of said reduced portions spaced some distance from said one of said reduced portions, the portion of said other end of said evaporator positioned between said reduced portions being undisturbed, said restrictor

tube mounted to extend through said first reduced portion, through said undisturbed portion, and terminating within said second reduced portion, whereby the end of said capillary tube is held in a fixed position and the internal circumference of said joint increases in steps from the end of said capillary tube, to said second reduced portion, to said evaporator, so that vibrations of the end of said capillary tube and turbulence of said refrigerant flowing from the end of said capillary tube are minimized, a bonding material disposed longitudinally of the outer surface of said capillary tube and the inner surface of said first reduced portion between the ends of said first reduced portion, said undisturbed portion of said other end of said evaporator serving to collect any excess bonding material flowing from between said first reduced portion and said capillary tube, said undisturbed portion of said other end of said evaporator being substantially greater in volume than the volume of any excess bonding material, whereby none of said excess bonding material flows between said capillary tube and said second reduced portion.

**2,674,106. WATER COOLER.** Walter F. Hill, Pontiac, Mich. Application Dec. 7, 1951, Serial No. 260,400. 5 Claims. (Cl. 62-141.)



1. A water cooler unit adapted to be enclosed by housing means and connected with a water supply source, including a supporting frame structure, a condenser supported by said structure and adapted to be disposed adjacent an air inlet opening in the housing means adjacent the bottom thereof, a fan disposed above said condenser for drawing air therethrough and directing the same upwardly, a compressor supported on said structure above said fan and connected with said condenser, an evaporator supported on said structure above said compressor, insulating means sealing off said evaporator from the portion of the housing therebelow, an air outlet in said housing below said insulating means, said evaporator including a tube having a finned outer periphery through the interior of which water flows, one end of said tube being connectable to the water supply source and the other end providing a water outlet, a second tube surrounding said water tube in spaced relation thereto and connected with said compressor and said condenser, through which refrigerant is adapted to flow to cool the water in the inner evaporator tube.

**2,674,263. BEVERAGE DISPENSER HAVING A MIXING CONTROL VALVE.** Earl V. Rupp, Charles E. Adams, and Savin L. Sundstrom, Chicago, Ill., assignors to The Bastian-Blessing Co., Chicago, Ill., a corporation of Illinois. Application Aug. 5, 1948, Serial No. 42,564. 13 Claims. (Cl. 137-604.)



1. A draft arm comprising a body, a passage for water containing carbon dioxide, a second passage for syrup, a pair of valve means for controlling the flow of water and syrup through said passages, a stem depending from said body, a downwardly converging collector surrounding said stem and supported by said body, a collar supported on said stem adjacent said body and having a plurality of passages therethrough connecting the first mentioned passage with the bottom of said collar, a spray guide surrounding said stem below said collar and spaced therefrom, a frusto-conical surface on the upper part of said spray guide, a complementary surface on the

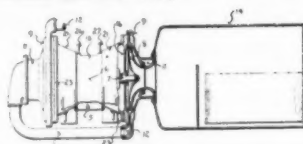
lower part of the collar said two surfaces forming a diverging flow area, an axial passage for syrup through said stem, said passage being in communication with the syrup passage in said body, and a flow restricting orifice in said axial passage.

**2,674,297. METHOD OF MANUFACTURING DUCTS.** Fred A. Greenwald, Southgate, Calif., assignor to Arrowhead Rubber Co., Los Angeles, Calif., a corporation of California. Application May 6, 1949, Serial No. 91,689. 4 Claims. (Cl. 154-8.)



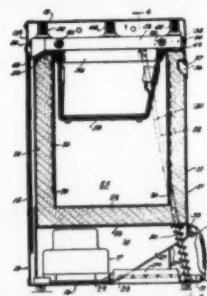
1. A method of duct manufacture comprising coating two glass fabric sheets inside and out with silicone rubber, partially curing said sheets to remove tackiness, forming said first sheet into an inner tube, winding wire helically around said inner tube with space between each helix, applying a layer of silicone paste adjacent said wire, winding said second sheet around said wire and said inner tube to form an outer tube, deforming said outer tube between said wire to conform to the helical pattern of said wire, and bonding said inner and outer tubes together where they contact by heat-curing the silicone materials.

**2,674,404. TURBOCOMPRESSOR FOR REFRIGERATING APPARATUS.** Theodore R. Wieseman, Milwaukee, Wis., assignor to The Louis Allis Co., Milwaukee, Wis., a corporation of Wisconsin. Application Dec. 26, 1950, Serial No. 202,716. 1 Claim. (Cl. 230-117.)



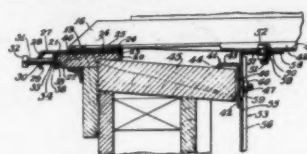
In a motor-compressor assembly of the type wherein the compressor comprises a centrifugal impeller and a housing for the impeller having a disc-like end wall which is imperforate except for a hole in its center; a motor housing having a substantially cylindrical medial section comprising inner and outer tubular members having radially spaced portions defining a circumferential fluid passageway in the wall of the medial housing section through which passageway a fluid cooling medium may be circulated, a co-axial annular end section fixed to one end of the medial housing section and larger in diameter than said medial housing section, and a continuous circumferential flange on the housing extending radially between and joining said end of the medial housing section with the end section of the motor housing, said flange having a surface facing away from the medial housing section and lying in a plane normal to the housing axis; an electric motor in the motor housing, including a stator fixed inside said inner tubular member in heat transfer relation therewith, a rotor operable inside the stator, and a motor shaft carrying the rotor and projecting coaxially through and beyond said end housing section; means providing a fluid tight joint between said tubular members adjacent to the junction between said motor housing sections, comprising an annular sealing element encircling the inner tubular member and seated in a substantially shallow annular groove in said end of the medial housing section, said groove opening to said surface of the housing flange and the sealing element being confined between said tubular members in the bottom of said groove, and a ring seated on said surface of the housing flange and secured to the latter, said ring bearing axially against the sealing element to hold the same in the bottom of its groove and tightly engaged between said tubular members; a bearing carried by said ring and in which the adjacent end portion of the motor shaft is journaled, said bearing being located wholly within said end section of the motor housing; and a mounting flange on the outer end of said housing end section providing for attachment of the latter to said imperforate end wall of the compressor housing with the motor shaft closing the hole in said end wall and projecting therethrough for driving engagement with the impeller.

**2,674,511. REFRIGERATOR HAVING A TILTABLE COMPARTMENT.** Charles G. Minor, Evanston, Ill., assignor to one-half to Albert G. McCaleb, Evanston, Ill.; Harry H. Gmelner, executor of said Charles G. Minor, deceased; Ruth F. McCaleb, executrix of said Albert G. McCaleb, deceased. Original application Aug. 3, 1946, Serial No. 688,372. Divided and this application April 16, 1949, Serial No. 87,906. 3 Claims. (Cl. 312-269.)



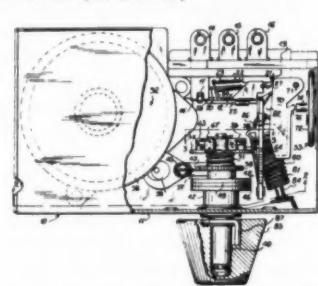
1. The combination in a refrigerator, of a base, a unit pivoted at the bottom on said base for tilting in a vertical plane from a vertical closed position to an angular open position, said unit having a low temperature compartment which is open at the top, a food storage container nested in the top of said compartment and removably supported at its upper edges by said unit, and a rod pivotally supported at one end on said base and projecting upwardly, the upper end of said rod being operative to support the front portion of said container during the tilting of said unit and while said unit is in its open tilted position, whereby to maintain said container at least approximately in upright position when the unit is open and during the tilting thereof.

**2,674,430. SUPPORT FOR AIR CONDITIONING APPARATUS.** Joseph A. Galassi and Arrel M. Harris, Evansville, Ind., assignors to International Harvester Co., a corporation of New Jersey. Application Nov. 24, 1950, Serial No. 197,448. 6 Claims. (Cl. 242-236.)



1. A structure for mounting a refrigerating unit in the window of an enclosure to be air cooled and formed to encompass said unit, including: a housing having a top wall, opposed side walls, a rectangular frame affixed between said side walls, said frame being fashioned to provide confining guide members adapted to receive a refrigerative conditioning unit slidably positioned therebetween; a flange depending from said frame adapted to engage the outer edge of the window stool; said frame being further provided with a series of spaced slotted openings proximate opposite ends thereof; means, including members having at least one end thereof hooked for insertion in said frame slots, for detachably affixing said housing to the window stool; and bracket means adjustably affixed to the housing frame and adapted for mounting on the window sill.

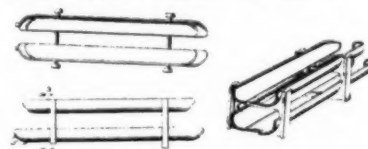
**2,674,665. CLOCK INITIATED DEFROSTER CONTROL FOR MECHANICAL REFRIGERATORS.** Estel C. Raney, Delaware, and John Liebermann, Columbus, Ohio, assignors to Ranco, Inc., Columbus, Ohio, a corporation of Ohio. Application June 14, 1951, Serial No. 231,464. 4 Claims. (Cl. 200-35.)



1. A control mechanism comprising a control member movable between two control positions, means for moving said member from one of said positions to the other, an actuator movable in a path in which it moves into and out of range of operative engagement with said control member to move said member from said other position toward the first mentioned position, power means including a driving member having a lost motion driving connection with said actuator permitting movement of said actuator independently of said driving member through said path, spring means urging said actuator from one limit of said lost motion connection and operative to move said actuator relative to said driving member through said path to actuate said control member, and means to prevent movement of said actuator by said spring through said path, the last mentioned means operative to release said actuator in response to predetermined movement of said actuator by said driving member.

### DESIGNS

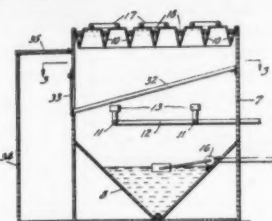
**171,902. EGG DISPENSING RACK FOR REFRIGERATORS.** John Lieber and Roman Lieber, Royal Oak, Mich. Application Jan. 14, 1953, Serial No. 23,133. Term of patent 14 years. (Cl. D67-3.)



The ornamental design for an egg dispensing rack for refrigerators, as shown.

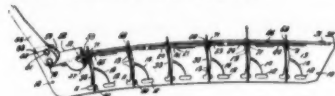
## Week of April 13

**2,674,858. APPARATUS FOR PRODUCING CLEAR ICE CUBES.** Willard C. Magnuson, St. Paul, and Anthony D. Falcich and Chester A. Weseman, Austin, Minn., said Falcich and said Magnuson assignors to said Weseman. Application July 26, 1950, Serial No. 175,942. 3 Claims. (Cl. 62-3.)



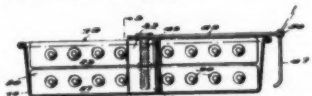
1. Apparatus for producing clear ice bodies comprising a freezing chamber, a mold structure mounted in the upper portion of said chamber, said mold structure including a plurality of closed-topped molds having open bottoms, a number of spray nozzles disposed in spaced relation below said mold structure and constructed to direct a finely divided spray of liquid to be frozen into said molds, a thermostatically controlled refrigeration system including a compressor, a cold refrigerant freezing supply line and a hot refrigerant defrosting supply line, a pair of solenoid valves respectively interposed into said lines, a thermostat responsive for actuation to temperature changes within the freezing chamber and closing one solenoid during the freezing operation and the other solenoid during the defrosting operation, a liquid collection tank disposed below said mold structure, and a pump controlled by said thermostat for supplying liquid under pressure to said nozzles during the freezing cycle only, and means for collecting the cubes released from the molds during the defrosting cycle.

**2,674,860. BOWABLE ICE TRAY GRID WITH PREFLEXED CROSS WALLS.** Robert Lay Hallock, Larchmont, N. Y. Application April 28, 1950, Serial No. 158,773. 15 Claims. (Cl. 62-108.5.)



1. An ice tray grid having a series of resilient transverse walls, parts including a longitudinal wall member intersecting said series of transverse walls and holding the latter in flexure, said parts being movable to unflex said walls to loosen ice attached thereto.

**2,674,861. DEVICE FOR FRAGMENTING ICE.** Anthony J. Giordano, Arlington, Va., assignor of twenty-five per cent to Albert M. Zalkind, Arlington, Va. Application July 26, 1950, Serial No. 176,005. 16 Claims. (Cl. 62-108.5.)



1. A device for fragmenting ice comprising a freezer tray, a pair of grids comprising breaker elements disposed in said tray below the expected ice surface, a screw engaging said grids and being rotatable for effecting relative motion of said grids.

(To Be Continued)

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**DOUBLING IN BRASS** as engineers and teachers are these four employees of the A-P Controls Corp. They are (l. to r.) Vincent Reynolds, refrigeration control sales; Clarence Aughey, chief mechanical engineer for A-P Controls; Henry Michalski, gas control sales; and Harold Lonn, of the engineering department. The four combine actual practice at A-P Controls with theory they teach to night school classes in Milwaukee.

## A-P Controls Employees Combine Teaching In Night School with Daytime Engineering

MILWAUKEE—Four employees of A-P Controls Corp. have found that they can combine work and school in a manner that benefits both their daytime and nocturnal "professions."

The four busy themselves in their daytime jobs, and then, several nights a week, hurry downtown to impart some of their knowledge to students at the Milwaukee Vocational School and the Milwaukee School of Engineering.

The combination "engineer-teachers" are Henry Michalski, gas control sales; Vincent Reynolds, refrigeration control sales; Clarence Aughey, chief mechanical engineer for the firm; and Harold Lonn, an engineer at A-P.

Of the group, Aughey, 50, could well be called the "dean." Seventeen years ago he organized the first air conditioning class at the Milwaukee Vocational School. After 13 years, he was given a refrigeration class, and today he instructs advanced refrigeration techniques.

Aughey admits that his teaching job, which he refers to as a pleasant "hobby," helps him in his job at A-P.

"I can keep up with the new trends in the field, and at the

same time, impart some of my knowledge to the students.

He says his classes average about 18 students per semester, with the emphasis on actual projects, rather than theory.

Aughey says the refrigeration course has been so successful that the school is thinking of accepting it in its regular technical level curriculum.

Michalski, 30, who is in gas control sales at A-P Controls, teaches beginning refrigeration at the Vocational School. He also has a background of instruction at the Milwaukee School of Engineering.

Michalski's case is unique in that he is in gas control sales and teaches refrigeration—two fields not particularly synonymous. But Michalski's grasp of the refrigeration field helps to train the students who want to go on into Aughey's advanced course. And Michalski feels that teaching is an excellent complement to his sales job.

Lonn, 33, has been teaching for three years at Vocational School. A project engineer at A-P Controls, he teaches air conditioning and heating, in season. Lonn notes the increased interest in air conditioning since manufacturers developed the room air conditioning units, thus attracting all types of students, each with a different reason for taking the course.

Lonn feels that the teaching he does has helped him "think on his feet" and assisted him materially in his job at the plant.

Reynolds, a 26-year-old Navy veteran, who is in refrigeration control sales at A-P, is on the staff of the night school at the Milwaukee School of Engineering. He teaches a small group of students the principles of refrigeration and applies a great deal of his professional experience in his teaching.

He, too, feels that the public speaking experience gained is invaluable.

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## PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date.

It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Rock Island Arsenal; Springfield Armory; Watertown Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q," or, if numbered, the number will be followed by the letter "Q."

### DEPARTMENT OF DEFENSE

Description	Quantity	Reference No.	App. Bid Date
District Engineer, St. Louis District, Corps of Engineers, St. Louis 2, Missouri			
Window Type Air Conditioning Units, One-Ton Capacity.	24 ea.	(CIVING-23-065-55-9B)	13 Sep 54
Galveston District, Corps of Engineers, P.O. Box 1229, Galveston, Texas			
Construction Post Exchange, 350-Man Theater and Dental Clinic Mod., Foster, A.F.B., Victoria, Texas. Work to consist of Const. of Wood Fr. Pk. Bldg., Approximately 9,800 Sq. Ft., Floor Area, Mech. Ventilated Incl. necess. Area, Const. Wood Fr. 350-Man Theater, Approx. 4,500 sq. ft. Floor Area, Air Cond. Roto-Clone of Dent. Clin. Furnished and Install DBL, WLL Thimbles on Vents of Var Exist Bldgs.	Job	(ENG-41-243-55-13B)	17 Sep 54
Corps of Engineers, New England Division, U.S. Army, 857 Commonwealth Ave., Boston, Massachusetts			
Construction of Central Heating Plant at Otis Air Force Base, Falmouth, Mass. Plans and Specs. Available approx. 16 Aug. 1954. Deposit Required \$10.	Job	(ENG-19-016-55-12B)	17 Sep 54 (Tentative)

### GENERAL SERVICES ADMINISTRATION

General Services Administration, Business Service Center, 114 Commerce, Dallas, Texas			
Beville, Texas, P.O.	Job	CR-7551-7	7 Sep 54
Converting Heating Facility, etc., from Coal to Gas.			

## Marlo 'Seazonaire' Units Condition Irvin Cobb Hotel In Paducah, Kentucky

PADUCAH, Ky.—Guests at the Irvin Cobb hotel here, a famous landmark bearing the name of a famous native son, now enjoy the comfort of year-round air conditioning.

Each suite in this popular stopping-place has been equipped with a Marlo "Seazonaire" remote room unit. The units provide clean, filtered cool air in summer and warm air in winter, with temperature regulated through a dial setting by the guest.

Shelby-Shipwith, Memphis, was mechanical contractor on the installation. Consulting engineer was Ferris & Hamig, St. Louis, according to the report.

## Pittsburgh Plate Glass Moves N. Y. Office

PITTSBURGH — Pittsburgh Plate Glass Co. has moved its Manhattan (New York) district office from 30 Rockefeller Plaza to an entire floor of a recently-completed office building at 579 Fifth Ave., New York.

The new quarters accommodate staffs representing national store front accounts and glass, glass fiber, and architectural (paint and glass) interests. The Fifth Ave. location also contains the New York district sales office of the Columbia-Southern Chemical Corp., a wholly-owned subsidiary.

## Old St. Louis Star Bldg. To Be Air Conditioned

ST. LOUIS — An extensive modernization job, costing around \$150,000 and including complete air conditioning, will be started immediately at the old St. Louis Star building at Twelfth and Olive Sts., it was announced recently.

Union Electric Co., owner and main occupant of the building, sold it recently to investors and then took a long-term lease on all floors and basement. Monogram Building Corp. of St. Louis bought the structure.

## CLASSIFIED ADVERTISING

### POSITIONS AVAILABLE

AIR CONDITIONING engineers—Opportunity with major manufacturer, midwest location. Application engineering and training work in rapidly expanding year around residential field. Several positions to be filled cover range of experience and salary. Our employees know of this ad. BOX A5022, Air Conditioning & Refrigeration News.

CHIEF ENGINEER—Experienced heating contractor in Cleveland is expanding air conditioning and refrigeration departments and needs competent engineer to take full responsibility for planning, purchasing and construction. Engineering college graduate between 30 and 35 years with 5 years' experience required. Opportunity offers salary plus bonus plus opportunity to take ownership interest. Our employees know of this ad. All replies kept confidential. In answering please give sufficient information to indicate qualifications and we will arrange personal interview. BOX A5025, Air Conditioning & Refrigeration News.

AIR CONDITIONING Service Engineer, with ability to maintain and diagnose troubles in systems from smallest to largest. Full knowledge of refrigeration, pumps, fans, air controls and electrical gear required. Permanent position. Good pay. State qualifications, background, experience in 1st letter. AIR CONDITIONING, Inc., 758 Front Street, San Diego, Calif.

### EQUIPMENT FOR SALE

SAVE MONEY, save time, get your special trade discount and free delivery on the compact condensate water disposal unit for air conditioners, ice bins, drinking fountains. Only 9" high, 11" wide and 4 1/2" thick; complete with check valve, float switch and tank. Will pump to 12 foot head. List \$50.00. Higher heads in stock. Order from your jobber. Guaranteed by KESCO PRODUCTS, P.O. Box 84, Springfield Gardens 13, New York. Established 1944.

NATIONALLY KNOWN 1/2 hp twin-cylinder compressor bodies with flywheel and service valve, reduced to \$30.00. Also 1 hp at \$33.00. 1-1/2 hp 220 volt complete motor compressor assembly with service valve,

specially priced at \$75.00. 1/2 hp 115 volt flat base compressor units, complete with receiver, now \$135.00. Limited supply of 1/2 hp fan-cooled hermetic units still available at \$34.00. All equipment new, all fully guaranteed. Send orders to MANN REFRIGERATION SUPPLY CO., 440 Lafayette St., New York City, or phone GRamercy 3-8000.

APPROXIMATELY 250 new unused 1/2 hp Frigidaire units charged with Freon 12, control and blower type evaporators. Packed 2 to a crate, 15 - 1/2 hp Tecumseh heads. Call or write for quantity price. All types parts, fittings and controls available. REFRIGERATION TRADING CO., 384 Canal Street, New York, New York. Walker 5-2073.

FOR SALE: Brand New Popular Brand Supermatic Hermetic Domes—1/2 H.P. \$40.00—3/4 H.P. \$42.50—1 H.P. \$45.00. Complete with relay and capacitors. Model R 5 and 7 1/2 H.P. Compressors \$115.00. Details supplied on request. Send for refrigeration parts and supplies catalog listing many other sensational values. WALTER W. STARR REFRIGERATION, 2833 Lincoln Ave. Chicago 13, Illinois.

COLLECTION METERS for sale—new and used. Available in quantity at greatly reduced prices. BOX A5027, Air Conditioning & Refrigeration News.

### FRANCHISES AVAILABLE

EXCLUSIVE FRANCHISE available. Texas and Louisiana, for competitive air conditioning line. Air and water cooled models for residential and commercial use. Lowest freight rates. Units proven in this area. Salesmanager to be in respective states in the near future. Give details and territory desired. BOX A5026, Air Conditioning & Refrigeration News.

### BUSINESS OPPORTUNITIES

FOR SALE commercial refrigeration and air conditioning business. Located in mid-west city of over 100,000. Now have exclusive Frigidaire franchise. Includes all necessary equipment, tools, vehicles, reconditioning and service facilities. Will lease modern show room, offices and warehouse. BOX A5018, Air Conditioning & Refrigeration News.



## New Philco Franchise--

(Concluded from Page 1, Col. 3) distribution which disregard and disrupt sound selling and servicing practices, and

"WHEREAS the building up of unbalanced and excessive inventories is a factor contributing to such transshipping, and

"WHEREAS control of the transshipping evil rests with the manufacturer and in the proper fulfillment by his distributors of their franchise responsibilities, and

"WHEREAS the Philco Corp. has undertaken by its newly announced policy of distribution to exercise firm control over inventories and over transshipping of its merchandise, using constructive measures to attain the announced objectives;

"NOW, THEREFORE, BE IT RESOLVED that the Executive

Committee of the National Association of Electrical Distributors, in session Aug. 9, 1954, especially commends the Philco Corp. and its executives for this progressive action in behalf of the welfare of their distributors, dealers, and the industry as a whole, and further expresses the hope that such action will be the forerunner of voluntary widespread correction by others of this and other industry problems, and

"BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to all members of the National Association of Electrical Distributors and to the trade press."

### AIMED AT CURBING EVILS

In speaking to company distributors, Otter said that the new policy is aimed at developing a more profitable relationship between distributors and dealers and toward curbing certain evils which have arisen in the industry.

"We want the new lines (for 1955) sold on a decent legitimate basis," he declared. "If not, we will have gained no ground, nor made any real contribution to this industry or to our own future."

"In prewar years you, as a distributor, were doing a job," he said. "You were performing a service. You were not a broker, or a jobber, or a warehouse, or an order taker. You were a merchandiser. You had a valuable contract and you sold a valuable franchise to the dealer."

But, he noted, during lush post war years, dealers became independent and drifted away from the distributor. Because everyone was so busy, they did nothing about it.

"The distributor no longer controls this industry," he asserted. "The dealers have taken over and as a result price has become the dealers' bible."

### DEALERS ARE ASKING HELP

"There are thousands of dealers," he went on, "who suddenly are seeing the light, dealers who realize this business is headed downhill and they are asking for help. If there ever was a psychological moment to turn this business back again to legitimate honest selling, it is now. . . ."

"I attended a meeting in Chicago called by the directors of the National Retail Furniture Association. They asked us, the manufacturers in this business, to show some leadership."

"They know their volume has slipped and they don't like it. They want help. They don't want to quit this business, but they are not

going to enter a cat and dog fight either. They didn't even ask for more discount. They did ask for a chance to sell at retail."

"To have control of your territory you must control the supply of Philco merchandise that comes into your territory. Transshipping, one dealer to another, can upset your plans faster than anything else in this business."

"This practice of dealer wholesaling has grown and today, in some areas, it is out of hand. I cannot believe any Philco distributor would knowingly sponsor, or allow transshipping. But, at the same time, it is the responsibility of each distributor to control his own merchandise."

### DISTRIBUTOR INVENTORY CONTROL

"Manufacturers have received their share of the blame for some of the problems in this industry. A certain amount of liquidation will always be with us, but it must, and should be, controlled and held to a minimum."

"We are adding to factory inventory control a distributor unit inventory control. Balance means the right number, not too much and not too little. We want your inventories to be in direct relationship to your sales for any given period."

Otter said that the new franchises represent six major products: television, radio, refrigerators, freezers, electric ranges, and air conditioners.

## Inspection Racket Brings Fines to 4 N. Y. Firemen

NEW YORK CITY—Three firemen who pleaded guilty to irregularities in inspecting refrigeration and air conditioning equipment were fined 30 days pay and two of them were warned that a further breach of fire department regulations would mean dismissal.

A fourth fireman was fined 20 days pay.

The trial of a fifth allegedly involved in the fee-splitting kick-back scheme is scheduled to begin on Sept. 9.

Deputy Fire Commissioner Albert S. Pacetta presided at the trial of the first four and imposed the fines. These will be reviewed by Fire Commissioner Edward F. Cavanagh, Jr. who, according to Pacetta, "has frequently expressed his condemnation of acts of this and kindred sort which bring the department into disrepute."

### FIREMEN PLEAD GUILTY

The firemen pleaded guilty to taking money from owners of large refrigeration and air conditioning installations where fire department regulations require a qualified operator in constant attendance. For this consideration they would permit an operator to hang his certificate next to the equipment, though he only visited the equip-

ment at infrequent intervals rather than being in constant attendance.

While the owners paid \$125 to \$150 a season for this "service," they would have had to pay a refrigeration engineer a salary of \$90 a week or more to keep him on full-time duty.

### PERMITTED EVASIONS

As reported in the *New York Herald Tribune*, Fire Department Inspector Francis X. Bresnan pleaded guilty to permitting this evasion of regulations. Fireman Albert V. Marinelli and Lt. John G. Frey, both licensed operators, were charged with arranging through Bresnan to have their licenses used and with kicking back to him part of the fees collected.

Capt. Philip Weinstein, who was also a licensed operator, admitted, according to the newspaper, that Bresnan put him in touch with a Madison Ave. store and that he had received \$600 during two years in which his license hung there.

## 'Open-End' Mortgages--

(Concluded from Page 1, Col. 5)

groups that dealt in long term loans were against it.

It was pointed out, however, that the FHA's action does not prohibit any financial institution from applying an open-end mortgage loan to appliance sales. They can do so at their own risk. They just cannot get FHA insurance to cover such a loan.



## Gas Purgers

Use a patented principle for saving both power and refrigerant—whether ammonia or Freon. Pay for themselves. Made in two sizes for hand operation; one size automatic.

Get full details from Frick Bulletin 200: write today.

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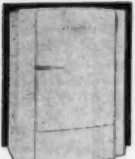
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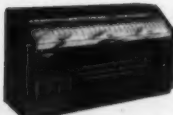
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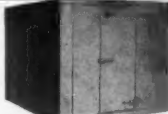
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Metal Walk-In Cooler



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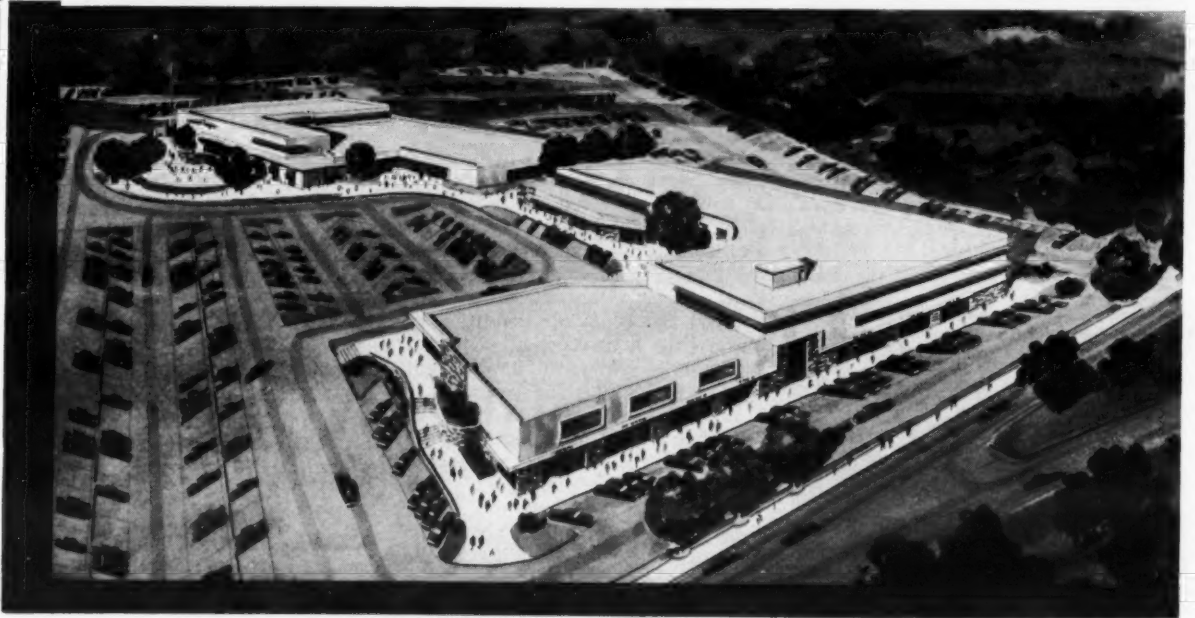
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At the new Bishop's Corner shopping center, West Hartford, Conn., every provision has been made for customer and employee comfort. In keeping with the keynote on quality, over 600 capacity-tons of BUSH air conditioning and heating products were selected.

Prominent among Bush equipment installed are Air Handling Units in both vertical and horizontal models. Advantages of these versatile central station units are many: rigid angle iron framing and self-aligning ball bearings assure long life, eliminate vibration and guarantee quiet operation.

All units have built-in by-pass sections to provide 100% air by-pass when required. Centrifugal type fans, mounted on a common solid steel shaft, are statically and dynamically balanced for quiet, efficient operation. Matching housing with scroll for each fan insures smooth air flow.

Capacities range from 800 to 21,600 CFM, with nominal ratings from 3 to 65 tons. Face and by-pass dampers, humidifiers and both throw-away and cleanable type filters are available for all units.

Catalog 710A, free on request, contains complete specifications.



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